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## Habitability

▶ Livability Theory

## Habitat

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## Habitat Indicators

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## Habitual Physical Activities in the Elderly

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## Habitus

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### Synonyms

Dispositions

### Definition

In brief, *habitus*, as conceived by Pierre Bourdieu, is a culturally and structurally conditioned set of dispositions that shapes how one orients to the social world, including one's perception of one's life chances and corresponding styles of thought and behavior. Bourdieu theorized habitus to be a formative influence on how students from different social classes engage with the educational system and their subsequent levels of educational – and ultimately occupational and socioeconomic – attainment. Subsequent theory and research has suggested that gender differences in habitus may also help explain gender disparities in educational and occupational pathways. In this entry, the effects of habitus on quality of life are considered indirectly through its effects on educational achievement – which has many well-documented impacts on quality of life.

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## Description

In brief, habitus, as conceived by Pierre Bourdieu, is a culturally and structurally conditioned set of dispositions that shapes how one orients to the social world, including one's perception of one's life chances and corresponding styles of thought and behavior. While Bourdieu's notion of habitus is rather broad, Swartz (1997, p. 108) provides a useful encapsulation, "[t]he dispositions of habitus represent *master patterns* of behavioural style that cut across cognitive, normative, and corporal dimensions of human action. They find expression in human language, nonverbal communication, tastes, values, perceptions, and modes of reasoning."

Bourdieu theorized habitus to be a formative influence on how students from different social classes engage with the ▶ educational system and their subsequent levels of educational – and ultimately occupational and socioeconomic – attainment. Recently theorists and researchers have also begun to explore the effects of gender socialization on habitus and how this might help us understand traditional gender disparities in educational and occupational pathways.

There is a substantial body of literature pointing to the positive effects of educational attainment on quality of life in various domains such as material well-being/standard of living, productivity/achieving in life, ▶ emotional well-being/resiliency, health, community, relationships/intimacy, and personal safety/future security (Edgerton, Roberts, & von Below, 2012). Put another way, disparities in educational attainment are associated with numerous disparities in quality of life. This article focuses on the indirect effects of habitus on quality of life through its effects on educational achievement.

The *socioeconomic gradient* in education refers to the fact that ▶ educational inequality and socioeconomic inequality exist in a mutually constituting relationship that is intergenerational in its effects; parental ▶ socioeconomic status (SES) is a major determinant of an individual's educational attainment, and in turn, educational attainment is a major determinant of that individual's subsequent SES. It is well established that educational achievement is strongly linked in all OECD countries to the occupations, ▶ education, and economic status of students' parents, although the magnitude of the relationship differs across countries (UNICEF, 2002).

There is a well-documented positive relationship between parental education and child education level and cognitive development (Wolfe & Haveman, 2000). There is a positive association between having parents with at least some post-secondary education (as compared to none) and students' high school math and science achievement, as well as their level of reading comprehension. Reared in more learning-enriched or intellectually stimulating home environments from an early age, children from socioeconomically advantaged backgrounds enter formal schooling with a greater "readiness to learn" (Feinstein et al, 2004). Such early educational advantage tends to persist at successive educational levels (Kerckhoff & Glennie, 1999). Students whose parents attended post-secondary institutions are more likely to pursue post-secondary education themselves, more likely to attain a first degree, and are more likely to continue on to graduate or professional school. For instance, students whose parents attended a post-secondary educational institution are twice as likely to complete a bachelor's degree as those whose parents did not, while students whose parents hold bachelor degrees are five times as likely as first generation post-secondary students to also earn one (Pascarella & Terenzini, 2005).

Pierre Bourdieu's theory of social and cultural reproduction is one of the most prominent attempts to explain the intergenerational persistence of such inequality in educational outcomes. Bourdieu views the formal education system as a primary mechanism in the perpetuation of socioeconomic inequality, as it serves to legitimate social hierarchy by transforming it into an apparent hierarchy of gifts or merit (Bourdieu & Passeron, 1977; Bourdieu, 1997, 2006). In constructing his account of social reproduction, Bourdieu deployed a number of compelling concepts. Most well known in North America are his concepts of social and cultural capital, but less known are the accompanying notions of habitus, field, and practice.

Bourdieu (1997) delineates three fundamental forms of capital: *economic capital*, which is readily convertible; *social capital*, which is comprised of "social obligations" or "connections"; and *cultural capital* or "cultural competences" which can be embodied (internalized and intangible), objectified (cultural artifacts), and institutionalized (officially accredited). Bourdieu (1997) sees the forms of capital as mutually constitutive in that financial capital affords the time and resources for investment in the development of children's ▶ cultural capital which is associated with future educational and occupational success and in turn contributes to the accumulation of financial capital; socioeconomic success is also associated with greater social capital in that one's social network becomes broader, more influential, and more conducive to opportunity and further enhancement of one's other capital stocks.

Three more concepts integral to Bourdieu's theory of cultural and social reproduction are habitus, field, and practice. *Habitus* is the learned set of preferences or dispositions by which a person orients to the social world or put another way; habitus is the internalized interpretive framework through which one perceives the social world and one's prospects within it. Habitus is rooted in family upbringing (socialization within the family) and conditioned by one's position in the social structure. Bourdieu termed it "socialized subjectivity" or subjectivity conditioned by structural circumstances (class, gender, and ethnicity/race). Habitus shapes the parameters of people's sense of agency and possibility; it entails perceptual schemes of which ends and means are probable given that individual's particular position in a stratified society.

The term *field* refers to the formal and informal norms within a particular sector of society (e.g., family, religion, education, art, politics, and economics). Fields are characterized by their own particular regulative principles – the "rules of the game" – and are subject to power struggles among different interests seeking to control the capital (and the "rules") in that field. Individuals' positions within a particular field are derived from the interrelation of their habitus and the capital they can mobilize in that field. People's *practices* or actions – their behavioral repertoire – in a particular field are the consequences of their interacting habitus and cultural capital.

Habitus at a general level is the overall perceptual or interpretive framework through which the person orients to their social world, but there are particular subsets of habitus manifest within different fields; that is, the habitus most befitting one field will be distinct in some respects from the habitus befitting another field. Or as Jenkins (1992, p. 84) explains "[e]ach field, by virtue of its defining content, has a [somewhat] different logic and taken-for-granted structure of necessity and relevance which is both the product and producer of the habitus which is specific and appropriate to that field."

## "Classed" Habitus

Within the field of education, Bourdieu posited that attitudes toward schooling represent an important aspect of habitus. In a stratified society, individuals from different social classes do not share the same "objective probability" of educational success, and thus, according to Bourdieu, their dispositions toward schooling will tend to bear the imprint of such structural disparities. The dominant class habitus includes a "positive attitude" toward schooling, that is, it entails ". . .the system of dispositions towards the school, understood as a propensity to consent to the investments in time, effort, and money necessary to conserve or increase cultural capital" and subsequent returns (Bourdieu, 2006, p. 270). In light of greater anticipated socioeconomic returns down the road, middle-class families are more likely than working-class families to subscribe to, and their children better prepared to perform, the technical and behavioral practices sanctioned by the school system. Conversely, working-class students, for example, with less cultural capital and a working-class habitus, are less likely to share this propensity, as their families are less likely to anticipate educational success and the attendant returns to schooling. Such students, conditioned by their disadvantaged social position, will tend to have more "negative dispositions toward school" and hence will tend to self-select themselves out of the higher education pathway, as they perceive their prospects for higher educational success to be unlikely (Bourdieu, 2006, p. 269).

Nash (2002) uses the term "educated habitus" to refer to the particular subset of habitus most relevant to, or conducive to success within, the field of education. Nash (2002) cites ethnographic evidence that high-achieving secondary school students exhibit a "distinctive concept of self-discipline," one that emphasizes the value of particular academic practices – for example, attentiveness, diligence, and self-control – to academic performance (Nash, 2002, pp. 39–41). Many working-class students are less willing to adhere to such notions and practices, not because they want to fail but because "…they simply have a different conception of what is worth knowing than the school" (Nash, 2002, p. 34).

Bourdieu conceives habitus to be both a "structured structure" and a "structuring structure." As the circumstances of people's social origins – and associated life chances – tend to influence their perceptual and behavioral dispositions, so too do their consequent actions (practices) tend to contribute to the perpetuation or reinforcement of like circumstances and life chances for themselves. Students with direct exposure to the practices and rewards of academic self-discipline via parental instruction and parental modeling are likely to have a more developed sense of the functionality of such self-discipline. They may have more intimate knowledge of the behavioral requirements, or practices, of self-discipline but also of its ultimate benefits in the form of accumulated cultural capital (educational attainment) and consequently enhanced socioeconomic returns. As well, success at each level of schooling (institutionalized cultural capital) demonstrates the utility of particular academic practices such as attentiveness, delay of gratification, and diligence – thereby increasing the likelihood of continued effective deployment of such practices at subsequent levels of schooling. Or put another way, successful accumulation of cultural capital reinforces those practices – and the willingness (habitus) to enact those practices – that promote it. Thus, the preferences of the educated habitus and related practices reinforce each other through their positive effects on academic, and ultimately occupational, attainment.

Hodkinson and Sparkes (1997) offer a useful elaboration of how habitus operates. They draw upon the field of cognitive science to invoke the concept of cognitive "schemata." Schemata are conceptual structures that form an interpretive framework through which people process incoming information and understand their experiences. Schemata, or interpretive frameworks, structure how we know the world "…by filtering out 'irrelevancies' and allowing sense to be made of partial information." They suggest that it is these schematic frameworks that underlie the dispositions comprising habitus. Schemata are robust but not static and modify incrementally as new information and experiences are encountered (Hodkinson & Sparkes, 1997, p. 34).

Furthermore, Hodkinson and Sparkes (1997) postulate that individuals make career (and by extension, one could argue, educational) decisions within particular "horizons for action." The concept of horizons for action denotes "the arena within which actions can be taken and decisions made." In terms of career decision-making, these horizons are influenced by the interrelation of habitus and the "opportunity structures of the labour market" (Hodkinson & Sparkes, 1997, p. 34). Hodkinson and Sparkes' (1997, p. 33) research indicates that people's career decisions involve a pragmatic rationality shaped by their horizons for action, which "…both limit and enable our view of the world and the choices we can make within it." By extension, Hodgson and Sparkes' conceptualization would also seem to aptly apply to students', more or less conscious, decision-making along their educational pathways. People from different social backgrounds will perceive more or less open horizons for action, that is, those with relevant advantages will tend to have more degrees of freedom available at respective choice points along the way. Further to this, horizons for action are segmented (e.g., by class, gender, and race), in that no individual seriously considers the entire spectrum of educational or occupational opportunities.

### Gendered Habitus

Although formal obstacles to female participation in various occupations have decreased dramatically over the years, and women have made notable gains in various nontraditional career paths, gender-differentiated patterns of educational and occupational attainment are still very much in evidence. Traditional gender typing continues to shape the educational trajectories of many boys and girls, for example, channeling boys disproportionately toward math and sciences while swaying females toward the arts and humanities (Bernhard & Nyhof-Young, 1994; Forcese, 1997; Weiner, Arnot, & David, 1997). Although decreasing, traditional gender gaps in math, reading, and science achievement persist (e.g., Edgerton, Peter, & Roberts, 2008). As well, even though more women than men are now enrolling in and graduating from university, most of the growth has been in traditionally female fields such as education, nursing, arts, languages, sociology, and psychology, while men still account for the vast majority of graduates in mathematics, computers and information sciences, architecture, engineering, and related technologies (Canadian Association of University Teachers [CAUT], 2007).

Bourdieu began to address the gendered nature of habitus in his later writings, most explicitly in *Masculine Domination* (Bourdieu, 2001). He identifies the educational system as a primary means by which gender inequality is reproduced. The education system contributes to the reproduction and legitimation of a cultural system that reinforces masculine privilege and shapes the gendered identities and perceptions of citizens accordingly. Bourdieu pointed out the “structural constancy” underlying gender relations and gender divisions in society; although on the surface there appears to be significant change, deeper more inveterate features of traditional gender alignments retain their hold within the public sphere. One of the primary structural features that Bourdieu draws attention to is the gendered hierarchy of occupations and professions in the labor market, noting that the degree of feminization of an occupational field is inversely related to its power and prestige (Bourdieu, 2001, p. 91). He argues that such gender segmentation, culturally reproduced and structurally embedded, is internalized by young women who tend to turn from formally open, but less traditional, educational and occupational paths.

While various feminist theorists have taken issue with aspects of Bourdieu’s account, a number have also pointed out that there is much in his work to build upon in terms of understanding the persistence of gender inequality in education (e.g., Dillabough, 2006, 2009). As Mickelson (2003, p.374) observes, “[t]he gendered nature of habitus is a consequence of the different possibilities that women and men perceive are available to them.” Habitus develops in childhood as the individual comes to understand the availability and probability of various pathways for someone in their social position. Just as class location can influence one’s perceptions of which pathways are more or less realistic, so too can gender. Enduring gender disparities in academic achievement, as well as significant gender segregation in the labor market, point to the reality that “men’s and women’s social actions take place in differently gendered fields” (Mickelson, 2003, p. 374).

While the picture is far from clear, there is emerging evidence to suggest that Bourdieu’s concept of habitus does indeed have something important to contribute to understanding persistent class and gender (and perhaps ethnic/racial) disparities in educational aspiration and educational achievement (e.g., Dumais, 2002; Lehmann, 2009; McClelland, 1990; Orr, 2011), which matter to quality of life in so many ways (Edgerton et al., 2012).

## Cross-References

- ▶ Cultural Capital
- ▶ Education
- ▶ Educational Inequality
- ▶ Educational System
- ▶ Emotional Well-Being
- ▶ Gendered Work
- ▶ School Readiness
- ▶ Socioeconomic Status (SES)

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## HADS

▶ Hospital Anxiety and Depression Scale for Use Among Adolescents

## Halo Effects

▶ Life Satisfaction Ratings and Response Formats

## Hamilton and Wentworth County, Ontario, Canada, Sustainable City Plan

▶ Vision 2020: Hamilton and Wentworth County, Ontario

## Handicap

▶ Disability and Health

## Handicapped Older Workers' Job Satisfaction in Europe

▶ Self-Employment and Job Satisfaction Among Older, Disabled Europeans

## Handicapped Persons

▶ Disabled Persons

## Happiness

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### Synonyms

Affect balance; Contentment; Enjoyment of life; Life satisfaction; Sum of pleasures and pains; Well-being, subjective

### Definition

The degree to which a person evaluates the overall quality of his/her own life as a whole positively. In other words, how much one likes the life one lives.

### Description

#### Concept of Happiness

The word "happiness" is used in various ways. In the widest sense, it is an umbrella term for all that is good. In this meaning, it is often used interchangeably with "well-being" and denotes both individual and social welfare. The word is also used in the more specific meaning of "a subjective enjoyment of life," and it is on this meaning we will concentrate in this lemma.

Happiness is defined as *the degree to* which an individual judges the overall quality of his/her own life as a whole favorably. In other words, how much one likes the life one leads. This definition is explained in more detail in Veenhoven 1984:22. This definition forms the basis of Veenhoven's World Database of Happiness (Veenhoven 2012).

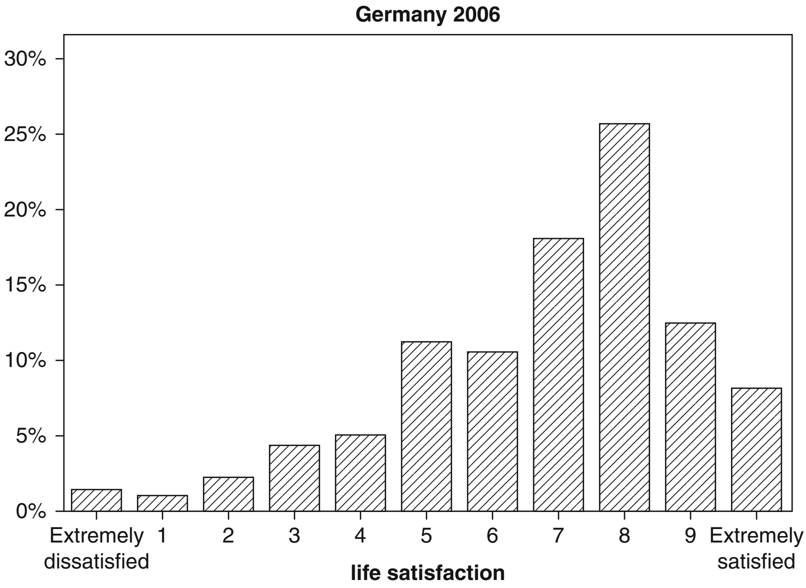
#### Components of Happiness

When assessing how much we like the life we live, we draw on two sources of information: how well we feel most of the time and to what extent we are getting what we want from life. These sub-appraisals are referred to as "components" of happiness, respectively, an affective component called *hedonic level of affect* and a cognitive component called *contentment*. These components are discussed in separate lemmas in this encyclopedia.

#### Scientific Literature on Happiness

There is a large body of philosophical literature on the good life in which happiness in this sense is sometimes addressed, though seldom systematically analyzed and certainly never researched empirically. Empirical research on happiness emerged in the twentieth century, the first study dating from 1911. All the research reports are

**Happiness, Fig. 1** Happiness in Germany



listed in the Bibliography of the World Database of Happiness, which listed 7,000 publications at the start of 2012 (Veenhoven, 2012a). The findings of empirical research on this kind of happiness are gathered in the finding collections of the database; next to collections of distributional findings (Veenhoven, 2012c, 2012d) is a large collection of correlational findings (Veenhoven, 2012e).

## Measurement of Happiness

Since happiness is defined as something we have in mind, it can be measured using questions. An overview of questions used to measure happiness is available in the collection "Measures of Happiness" of the World Database of Happiness; to date, it includes about 900 variants (Veenhoven, 2012b). Measurement issues are discussed in more detail in the lemma "Happiness Measures" of this encyclopedia.

A commonly used question on happiness is as follows: "Taking all together, how satisfied or dissatisfied are you with your life as a whole these days? Please answer by ticking a number between 1 (dissatisfied) and 10 (satisfied)." This question has figured in many survey studies all over the world, and it has been answered by more than a million people.

## Happiness in Nations

An example of responses to the above question asked in Germany is given in Fig. 1. Responses differ widely across nations. In 2010, the *average* score on this 0–10 scale was 8.3 in Denmark but only 2.8 in Togo. Most of these differences can be explained by variation in societal characteristics, such as economic development, rule of law, and trust in people. People clearly live happiest in the most modern nations in today's world. Ongoing modernization is coupled with a gradual rise in average happiness in most nations.

There are also differences in *dispersion* of happiness in nations. In 2010, the standard deviation on this 0–10 scale was 1,4 in the Netherlands and 3.2 in Angola. These differences are also linked to societal development. Inequality of happiness tends to be lower in modern nations and has declined in these nations since the 1970s.

Scores on level and dispersion of happiness in nations can be combined to obtain an index of *Inequality Adjusted Happiness*, which is described in a separate lemma in this encyclopedia. Scores on average happiness in nations can also be combined with estimates of longevity to obtain an index of *Happy Life Years (HLY)*, which is also described in a separate lemma.

Data on all these indicators are available in the collection “Happiness in Nations” of the World Database of Happiness (Veenhoven, 2012c).

## Happiness in Publics

In addition to the data on happiness in the general population in nations, there is considerable data on happiness in specific populations, such as children, pensioners, medical patients, and criminals. These data are gathered in the collection of “Happiness in Publics” of the World Database of Happiness (Veenhoven, 2012d).

Some illustrative findings are as follows: Happiness tends to be lowest around the middle of life. Married people are happier than singles, but couples with children are not happier than childless couples. Happiness is strongly related to personality, but unrelated to IQ. Religious people are happier than nonbelievers in most countries of the world, but not everywhere.

## Correlates of Happiness

Numerous researchers all over the world have looked at differences in individual happiness within countries.

*Social Position*. Because most of the studies into individual differences in happiness have been inspired by egalitarian social policy, the emphasis is often on social differences, such as in income, education, and employment. Contrary to expectation, these positional differences have little bearing on happiness, at least not in modern affluent society. Together, positional variables explain, mostly, no more than 10 % of the variance in happiness. A summary of the main findings of these studies is given in Table 1.

*Life Ability*. The strongest correlates of happiness are found at the psychological level; happy people are typically better endowed with capabilities than the unhappy. The common variance explained by such variables tends to be around 30 %. Some main findings are summarized in Scheme 6. Much of the findings on individual variation in happiness boil down to a difference in *ability to control one’s environment*, and this pattern seems to be universal. An overview is presented in Table 2.

**Happiness, Table 1** Happiness and position in society: summary of research findings

| | Strength of correlation within *western nations* | Similarity of correlation across *all nations* |
|---|---|---|
| Social rank | | |
| Income | + | + |
| Education | ± | + |
| Prestige | + | + |
| Social participation | | |
| Employment | ± | + |
| Memberships | + | + |
| Primary bonds | | |
| Married | ++ | + |
| Children | 0 | ? |
| Friends | + | + |
| | ++ = Strong positive | + = Similar |
| | + = Positive | ± = Varying |
| | 0 = No relation | − = Different |
| | − = Negative | ? = not yet investigated |
| | ? = Not yet investigated | |

Source: World Database of Happiness, collection of Correlational Findings (Veenhoven, 2012e)

## Causal Path

Having established that people differ in happiness, the next question is why. Various factors are involved: social institutions and individual behavior, simple sensory experiences and higher cognition, stable characteristics of the individual and his or her environment, as well as freaks of fate. A tentative ordering of factors and processes is presented in a sequence model in Table 3. In this model, the assumption is made that the judgment of life draws on one’s flow of life experiences, particularly on positive and negative experience. The flow of experiences is a mental reaction to the course-of-life events. This includes major one-time events, such as marriage or migrations, as well as repetitious mundane events, like getting up in the morning and doing the dishes. The events that happen in life are partly a matter of good or bad luck, such as accidents. The occurrences of life events also depend on given conditions and capacities. Traffic accidents are less frequent in well-organized societies and among attentive persons. Thus, the chances of “rewarding” and “aversive” events are not the same for everybody. This is commonly referred to as “life chances.” Present life chances root in past events and chance structures, in societal history, and individual development.

An example may serve to illustrate this four-step model: A person’s life chances may be poor because he/she lives in a lawless society, is in a powerless position that society, and is personally neither smart nor nice (Step 1). That person will run into many adverse events. He/she will be robbed, duped, humiliated, and excluded (Step 2). Consequently, that person will frequently feel anxious, angry, and lonely (Step 3). Based on this flow of experience, it is reasonable to assume that the person will judge their life as a whole negatively (Step 4).

## Consequences of Happiness

Prophets of penitence say that happiness spoils, among other things, because unhappiness drives activity and creativity. Yet, empirical research

**Happiness, Table 2** Happiness and life abilities: summary of research findings

| | Strength of correlation within *western nations* | Similarity of correlation across *all nations* |
|---|---|---|
| Proficiencies | | |
| Physical health | + | – |
| Mental health | ++ | – |
| IQ | 0 | + |
| Personality | | |
| Internal control | + | + |
| Extraversion | + | + |
| Conscientiousness | + | ? |
| Art of living | | |
| Lust acceptance | + | + |
| Sociability | ++ | + |
| | ++ = Strong positive | + = Similar |
| | + = Positive | ± = Varying |
| | 0 = No relation | – = Different |
| | – = Negative | ? = Not yet investigated |
| | ? = Not yet investigated | |

Source: World Database of Happiness, collection of Correlational Findings (Veenhoven, 2012e)

**Happiness, Table 3** Evaluation of life: a sequence model of conditions and processes

| Life-chances | Course of events | Flow of experience | Evaluation of life |
|---|---|---|---|
| Quality of society | | | |
| Economic welfare | | | |
| Social equality | | | |
| Political freedom | | | |
| Cultural lush | | | |
| Moral order | *Confrontation with*: | *Experiences of*: | *Appraisal of average affect* |
| Etc. . . | Deficit or affluence | Yearning or satiation | |
| Social position | Attack or protection | Anxiety or safety | Comparison with standards of the good life |
| Material property | Solitude or company | Loneliness or love | Striking an overall balance of life |
| Political influence | Humiliation or honor | Rejection or respect | |
| Social prestige | Routine or challenge | Dullness or excitement | |
| Family bonds | Ugliness or beauty | Repulsion or rapture | |
| Etc. . . | Etc. . . | Etc. . . | |
| Individual abilities | | | |
| Physical fitness | | | |
| Psychic fortitude | | | |
| Social capability | | | |
| Intellectual skill | | | |
| Etc. . . | | | |
| **Conditions for happiness** | | | **Appraisal process** |

typically shows positive effects of happiness, such as greater involvement in activities and better health. Many of these findings are condensed in the "broaden-and-build theory" Fredrickson (2004). An overview of the literature on consequences of happiness is available in the Bibliography of Happiness, Section Q (Veenhoven, 2012a).

### Pursuit of Happiness

Much of the research on happiness is prompted by the hope of finding ways to promote greater happiness for a greater number of people; however, several theories about happiness imply that improving our living conditions will not make us any happier. One such theory is that happiness is relative; another is the theory that happiness is a trait. Both theories have been tested and have been rejected. Another comforting finding is that average happiness in nations can be as high as 8 on a 0–10 scale. If this is possible in these surveyed countries, it should also be possible in other nations.

## Cross-References

- ▶ Affective Component of Happiness
- ▶ Contentment
- ▶ Databook of Happiness
- ▶ Eudaimonia
- ▶ Happiness Adjusted Life Years
- ▶ Happiness Measures
- ▶ Happy Life Years (HLY)
- ▶ International Happiness Scale Interval Study
- ▶ International Well-Being Index
- ▶ Livability Theory
- ▶ Quality of Life
- ▶ Quality of Life (QOL), an Overview
- ▶ Satisfaction with Life as a Whole
- ▶ Satisfaction with Life Scale (SWLS), an Overview
- ▶ Subjective Happiness Scale
- ▶ Subjective Indicators of Well-Being
- ▶ Subjective Well-Being (SWB)
- ▶ Temporal Satisfaction with Life Scale (TSWLS)
- ▶ Well-Being, Philosophical Theories of
- ▶ World Database of Happiness

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# Happiness Adjusted Life Years

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## Synonyms

Happy life expectancy (HLE); Happy life years (HLY); Quality adjusted life years (QALY)

## Definition

How long and happy people live. For individuals this can be assessed only once they have died. For populations it can be estimated by combining average happiness as assessed in surveys with average longevity as assessed using civil registration. The focus of this lemma is on happiness adjusted life years in nations.

## Description

How to assess how well a nation is doing? One way is to look at the quality of life of the people who live there. This view is gaining prominence, both among policy makers and the general public. Yet it begs the question of what quality of life is precisely and how it can be measured comprehensively.

### Assumed Quality of Life

Quality of life in nations is commonly measured by taking stock of conditions that are believed to make for a better life, such as economic affluence, full employment, and education. Measures of such conditions are added in an index, like the Human Development Index (HDI) or the Index of Social Progress (ISP). Items in such indexes are typically things that are on the political agenda, and as such these indexes provide information about progress on the way chosen. Yet these indexes do not tell us whether we are on the right track, that is, whether these policy achievements really improved the lives of citizens. Still another problem is that such measures typically assume that more is better and do not give us information about optimums, for example, just how many years of education are optimal for a good life.

### Apparent Quality of Life

Another approach to determine quality of life is to assess how well people thrive in a society. The focus is then on the outcomes of life, rather than on the preconditions. How well an organism thrives is typically reflected in its lifetime. In higher animals, thriving is also reflected in affective experience, and humans are moreover able to estimate how well they have felt over longer periods of time. These estimates of how we feel most of the time form the basis of our appraisal of how happy we are. Hence, in the case of humans, thriving reflects both in how long and how happy they live.

### Measure of Happy Life Years

How can we assess how long and happy people live in a country? This can be done by combining data on average happiness assessed in surveys of the general population with data on longevity taken from civil registration.

*Happiness*: Happiness is how much one likes the life one lives. Since this is something people have in mind, it can be measured using single direct questions. An example of a survey question on happiness is as follows: Taking all together, how satisfied or dissatisfied are you currently with your life as a whole? This is rated on a numerical scale ranging from 1 (dissatisfied) to 10 (satisfied).

*Longevity*: How long people will live in a country can be estimated on the basis of the longevity data of people who have died. Statisticians call this “life expectancy.”

*Computation*: Happy life years = life expectancy at birth × 0–1 happiness. Suppose that life expectancy in a country is 60 years. If everybody was perfectly happy in that country until they died (average score 10), these people would live 60 happy life years in that country. If the average happiness score is 5, the number of happy life years is obviously lower, in this case 60 × 0.5 = 30. If life expectancy is also 60 years but average happiness is 8, the number of happy life years is 48 (60 × 0.8) (Veenhoven 1996).

*Similar Measures in Health*: This index of happy life years (HLY) is comparable to measures used in the health sector, referred to as “quality adjusted life years” (QALY). “Quality” is then understood as “health” in a broad sense. Measures of this kind are used at the individual level to determine the effectiveness of different treatments. The measures are also used to assess public health in nations and in this context are called "health-adjusted life expectancy" (HALY) and "disability-adjusted life expectancy" (DALY) (Mathers et al. 1999).

### Differences Across Nations

Theoretically, this indicator of final quality of life has a broad variation; HLY is zero if nobody can live in the country and will be endless if a society was ideal and its inhabitants immortal. The practical range is about 50 years; the highest number of happy life years observed in the 2010s was for Costa Rica (66.7), and the lowest number was found in Zimbabwe (12.5). Recent data on happy life years in nations are available on the World Database of Happiness (Veenhoven, 2012a).

### Gains Over Time

Happiness has risen slightly in most developed nations since the second half of the twentieth century, and life expectancy has grown substantially. As a result, the number of happy life years has grown remarkably in most nations of the world. The gain of happy life years in Italy was 15.5 between 1973 and 2010. Data on changes in happy life years in nations are available on the World Database of Happiness (Veenhoven, 2012b).

### Determinants of Happy Life Years in Nations

There is a pattern in the differences in happy life years across nations and over time. About two-thirds of the large differences in HLY across nations can be explained by societal variation in economic affluence, freedom, equality, solidarity, and justice, all things over which policy makers have some control. So the data leave no doubt that policy matters for final quality of life and also indicate what matters most. Economic affluence still stands out as a major factor, but "tolerance" and "rule of law" also appear to be quite important. Yet not everything deemed desirable appears to go with more happy life years. For instance, income inequality appears rather to be positively related to HLY, yet social security spending is negatively related. This illustrates the above difference between "assumed" and "apparent" quality of life.

## Cross-References

- ▶ Greatest Happiness Principle
- ▶ Happiness
- ▶ Quality of Life

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# Happiness and Adolescents

- ▶ Adolescents' Life Satisfaction

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# Happiness and Behavior Genetics

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## Definition

Behavior genetics examines the role of genetics in animal – including human – behavior. It constitutes a highly interdisciplinary field, involving contributions from biology, genetics, epigenetics, ethology, psychology, and statistics.

## Description

Behavior genetic studies have systematically shown variation in ► happiness-related characteristics such as positive emotionality, ► life satisfaction, and ► subjective well-being to be influenced by genes. However, little is still known about the actual genes involved and the specific environmental factors. This is perhaps mainly due to happiness and positivity being *multifactorial* (i.e., multiple genetic and environmental processes individually and interactively influence their development) and *polygenetic* (i.e., many genes with differing effects are involved) characteristics with risk and protective factors acting in a complex, probabilistic fashion rather than more deterministic. Most of the genes involved are also likely to be *pleiotropic* (i.e., involved in multiple functions such as different biochemical processes throughout the brain). Due to small effects, genetic heterogeneity, and complex interplay with environmental factors, along with psychometric issues, the relationship between the genotype (i.e., genetic constitution) and the phenotype (i.e., observed happiness) is far from understood.

### Research Methods

Broadly speaking there are two main research strategies exploring genetic and environmental influences on happiness-related constructs today, namely, (1) *quantitative genetics* and (2) *molecular genetics*.

### Quantitative Genetics

Quantitative genetics makes use of data from genetically informative individuals (e.g., adoptees, twins, family members). As happiness-related characteristics are multifactorial and polygenetic, statistical approaches based on the properties of the normal curve can be used to estimate the relative proportions of variation attributable to genetic, shared, and non-shared environmental influences. The estimates are calculated without specifying the actual DNA sequences or the exact circumstances involved. Rather, their contribution is inferred from general knowledge on genetic and environmental resemblance in family members.

Basic quantitative genetic studies explore *whether* and *to what extent* genes contribute to individual differences. More advanced studies allow for exploration of *how* genes and environmental influences are involved. The majority of quantitative genetic studies have employed the classical twin design (CTD) which compares similarity in monozygotic (MZ) and dizygotic (DZ) reared-together twins. Some studies have also used data from other relative classes such as non-twin siblings (Bartels & Boomsma, 2009; Stubbe, Posthuma, Boomsma, & De Geus, 2005), parents, and offspring (Nes, Czajkowski, & Tambs, 2010), while some studies include both twins reared together and twins reared apart (Plomin et al., 1992; Tellegen et al., 1988). Studies including data from multiple types of relatives allow for exploration of more complex mechanisms, but are less common.

**Variance Components**. The CTD permits estimation of four different variance components – *two* genetic (additive and nonadditive) and *two* environmental (shared and non-shared). *Additive genetic influences* (A) comprise effects from a large, but unknown number of individual genetic loci whose effects combine additively, whereas *nonadditive genetic influences* (D) reflect interaction between multiple loci at the same locus (dominance) or across loci (epistasis). The total genetic effect is commonly termed *heritability* and represents the part of the total variation attributable to genetic factors in a specific population at a specific point in time. *Broad-sense* heritability ($H^2$) refers to effects from both A and D, and *narrow-sense* heritability ($h^2$) refers only to additive ones. The *shared environment* (C) reflects all nongenetic influences contributing to similarity. Of note, the CTD estimates the effective environment (i.e., outcomes produced by the environment), not the objective environment. Objectively shared family factors (e.g., low income) that influence siblings in a family differently (e.g., increasing risk of depression in one sibling and not the other), are categorized as non-shared. The *non-shared environment* (E) reflects all nongenetic contributions to differences between co-twins, including measurement error and stochastic chance effects.

The variance components are usually derived by specifying a mathematical model according to the differential degree to which pairs of MZ and DZ co-twins are correlated for genetic and environmental effects. Since MZ co-twins have identical DNA, both A and D are perfectly correlated in these pairs. By contrast, DZ co-twins share on average 50 % of their segregating genes (i.e., like other first-degree relatives), giving a genetic correlation of 0.50 (A) and 0.25–0.00 (D). As C includes all environmental influences causing similarity between co-twins regardless of zygosity, it is correlated 1.0 in all zygosity groups, whereas the E is by definition uncorrelated.

**Gene Environment Interplay**. Genetic and environmental factors are not independent, but transact and interplay over time. Different types of gene environment interplay are likely to be involved in the etiology of happiness and may introduce systematic biases in the genetic and environmental components based on standard twin studies (Purcell, 2003), but may be explored using new and powerful quantitative models and various molecular genetic strategies.

### Molecular Genetics

Molecular genetics examines the structure and function of specific genes, seeking to trace the causal pathways from specific DNA variants to a given characteristic (e.g., happiness). *Linkage studies* investigate co-inheritance between a gene locus and a given characteristic in family pedigrees and may search through the entire genome, but identifies chromosomal regions only – not specific locations (Heard et al., 2010). *Association studies* are hypothesis-driven studies targeting specific, pre-identified genetic markers (i.e., candidate genes) to explore association between a particular genetic variant and a given characteristic. Candidate-gene association studies may identify specific genes and permit detection of susceptibility genes of even fairly modest effect.

*Genome-wide association studies* (GWAS) are non-hypothesis-driven studies that commonly sequence all or most of the genome (Frazer, Murray, Schork, & Topol, 2009). Typically, GWAS focus on associations between particular characteristics and common gene variations called *polymorphisms*, particularly *single-nucleotide polymorphisms* (SNPs) or structural variations in the DNA such as *copy-number variations* (CNVs).

*Epigenetics* has more recently been suggested as a unifying principle in the etiology of multifactorial complex traits like happiness. Epigenetic mechanisms are likely to be important for understanding the molecular basis of happiness (Tsankova, Renthal, Kumar, & Nestler, 2007) and include long-lasting alterations in gene expression that are not associated with changes in the DNA sequence itself. These epigenetic changes may be induced by environmental events (e.g., maternal behavior), may be reversible (Heard et al., 2010), and may be heritable (York et al., 2005). A number of techniques for identifying epigenetic modifications of the DNA such as DNA methylation and other chromatin components like histone variants (Heard et al., 2010) are now available.

## Findings

### Quantitative Genetics

The majority of twin studies on happiness-related characteristics have shown variation to be due to genetic and non-shared environmental contributions only, with some studies indicating mainly additive genetic effects (Nes, Roysamb, Tambs, Harris, & Reichborn-Kjennerud, 2006; Roysamb, Harris, Magnus, Vitterso, & Tambs, 2002; Roysamb, Tambs, Reichborn-Kjennerud, Neale, & Harris, 2003; Schnittker, 2008) and other studies indicating mainly nonadditive genetic effects (Lykken & Tellegen, 1996; Stubbe et al., 2005). Studies including information from additional types of relatives have suggested also other types of etiological effects (e.g., assortative mating, shared environment, twin environment) (Nes, Roysamb, Harris, Czajkowski, & Tambs, 2010).

**Genetic Influences**. The genetic influences ($H^2$) are commonly shown to explain 30–50 % of the variation in overall happiness indicators such as subjective well-being, positive emotionality, and life satisfaction (Bartels & Boomsma, 2009; Caprara et al., 2009; Lykken & Tellegen, 1996; Nes et al., 2006, 2010; Roysamb et al., 2002, 2003; Schnittker, 2008; Stubbe et al., 2005). Genetic factors thus account for nearly half of the variation in happiness scores, leaving the genetic effect sizes among the largest effects found in happiness research overall.

In the largest biometric study on *subjective well-being* to date (N = 60,000), broad-sense heritability was estimated to be 36 % and 33 % for males and females, respectively (Nes et al., 2010). At least three studies have estimated heritability for global *life satisfaction* using the ► Satisfaction With Life Scale, reporting heritability from 38 % (Bartels & Boomsma, 2009; Stubbe et al., 2005) to 59 % (Caprara et al., 2009). Bartels and Boomsma (2009) have also reported broad-sense estimates for *quality of life in general*, *quality of life at the moment,* and *subjective happiness* in the range of 36 of 50 %, whereas Caprara and colleagues additionally reported heritability of *self-esteem* (73 %) and *optimism* (28 %). Other studies on optimism have reported heritability in the range of 23–36 % (Mosing, Zietsch, Shekar, Wright, & Martin, 2009; Plomin et al., 1992).

Twin studies have also examined heritability for the 24 *strengths* included in the Values in Action (VIA; Peterson & Seligman 2004), with significant genetic and non-shared environmental effects estimated for 21 out of the 24 character strengths (Steger, Hicks, Kashdan, Krueger, & Bouchard, 2007). Furthermore, two studies have shown genetic influences on *psychological well-being* using the Ryff Psychological Well-Being Scale, finding genetic influences for all six factors (Archontaki, Lewis, & Bates, 2012; Gigantesco et al., 2011).

The heritability estimates are sometimes on the low side when happiness is measured as a state more than a trait (Baker, Cesa, Gatz, & Mellins, 1992; Eid, Riemann, Angleitner, & Borkenau, 2003; Gatz, Pedersen, Plomin, Nesselroade, & Mcclearn, 1992) or in the narrow rather than global sense. Heritability has also been shown to vary across subsegments of the population. For example, family factors such as marital status, income, and parenting (e.g., conflict, regard) have been shown to moderate genetic and environmental influences on different happiness-related characteristics (Johnson & Krueger, 2006; Krueger, South, Johnson, & Iacono, 2008; Nes et al., 2010).

**Environmental Influences**. Nongenetic influences on happiness largely reflect *non-shared* environmental effects (Bartels & Boomsma, 2009; Nes et al., 2006; Roysamb et al., 2002, 2003) commonly accounting for 40–70 % of the variation. Influences from *shared* environmental factors are usually minor, or entirely absent, indicating that familial resemblance for happiness essentially is due to shared genes, and not to shared environments. Family circumstances may still exert large effects, but seem to operate on an individual-by-individual basis (i.e., affects siblings differently) rather than more general.

Some studies including additional relative classes rather than reared-together twins have also reported influences from shared environments for specific happiness-related constructs such as subjective well-being (Nes et al., 2010), positive emotionality (Tellegen et al., 1988), positive affect (Baker et al., 1992), optimism (Plomin et al., 1992), and life satisfaction (Nes, Czajkowski, Roysamb, Reichborn-Kjennerud, & Tambs, 2008). More sensitive designs may thus evidence significant shared environmental effects.

**Stability and Change**. Happiness-related characteristics have been shown to be fairly stable across situations and the life span with stability commonly accounting for 50 % of the time-specific variation (Lucas & Donnellan, 2007). Longitudinal biometric studies have shown this stability to be largely attributable to genes (Johnson, Mcgue, & Krueger, 2005; Mcgue, Bacon, & Lykken, 1993; Nes et al., 2006). Two Norwegian studies report 70–80 % of long-term levels to be due to genes (Nes et al., 2006, 2012). By contrast, environmental factors are mainly time-specific and circumstantial boosts in happiness, thus usually relatively short-lived (Nes et al., 2006, 2012).

**Covariance**. *Covariance Across Happiness Measures and Personality*. Most genes involved in complex traits are likely to have pleiotropic effects, affecting a number of different characteristics. Recent biometric studies have shown that a number of different happiness-related characteristics share a genetic core, with environmental influences being more distinct (Archontaki et al., 2012; Bartels & Boomsma, 2009; Caprara et al., 2009; Keyes, Myers, & Kendler, 2010; Nes, Czajkowski, & Tambs, 2010). Partly overlapping sets of genes have been shown to influence emotional, social, and psychological well-being (Keyes et al., 2010; Nes, Czajkowski, & Tambs, 2010), as well as ▶ self-esteem, life satisfaction, and optimism (Caprara et al., 2009; Nes, Czajkowski, & Tambs, 2010). Bartels and Boomsma (2009) also reported the correlations between quality of life in general, quality of life at present, life satisfaction, and subjective happiness to be largely attributable to common genes.

Common genetic sources of different happiness indicators may partly reflect personality. Numerous studies have shown the personality traits of neuroticism (N) and extraversion (E) to be closely related to a range of happiness measures (Lucas & Diener, 2008), and biometric studies have shown these associations to be influenced by genes (Eid et al., 2003; Weiss, Bates &, Luciano, 2008). In fact, the genetic sources of SWB have been found to be entirely shared with genetic influences on N and E and to a lesser extent with conscientiousness (Weiss et al., 2008).

*Covariance Between Happiness and Psychopathology*. Biometric studies on positive and negative affect (Baker et al., 1992), ▶ optimism, and pessimism (Plomin et al., 1992), as well as happiness and depressive symptoms (Franz et al., 2012; Nes et al., 2008), internalizing (Kendler, Myers, & Keyes, 2011a) and externalizing psychopathology (Kendler, Myers, & Keyes, 2011b; Nes et al., 2012), indicate that the etiological influences are partly shared, partly independent. However, the commonality of the genetic influences is larger than that of the environmental ones. The moderate associations between happiness and indicators of negative affectivity and psychopathology are thus largely due to genes. However, although some genetic factors for (low) happiness convey risk for psychopathology, high levels of happiness also reflect other independent genetic influences associated with healthy psychological functioning. Environmental influences are mainly specific. Thus, environmental factors for happiness are not strongly protective against negative affectivity and mental health problems.

*Covariance Between Happiness and Health.* Associations between well-being, perceived health, self-rated sleep problems, and somatic illness have also been shown to be substantially accounted for by genes (Mosing et al., 2009; Nes, Roysamb, Reichborn-Kjennerud, Tambs, & Harris, 2005; Roysamb et al., 2003).

## Molecular Genetic Studies

So far little is known about the particular genes involved in happiness. One genome-wide linkage study has reported a linkage signal at the end of the long arm of chromosome 19 and a second suggestive linkage peak at the short arm of chromosome 1 (Bartels et al., 2010). The linkage peaks were not clearly significant, however, and the sample is fairly small.

One recent association study has indicated that the low-activity genotype (MAOA-L) of the catabolic enzyme monoamine oxidase A (MAOA) is related to greater happiness in women (Chen et al., 2012). Another report suggests that the serotonin transporter-linked polymorphic region (*5-HTTLPR*) of the serotonin transporter gene (SLC6A4) may be important to life satisfaction (De Neve, 2011). A study on biased attention has also reported individuals with the homozygous long variant of the *5-HTTLPR* to display a significant bias toward processing of positive information and selectively avoiding negative information (Fox, Ridgewell, & Ashwin, 2009). Of note, several studies also suggest that the short *5-HTTLPR* variant may be important also for sensitivity to positive environmental cues and positive affect (Hankin et al., 2011). The short variant of the *5-HTTLPR* may thus code for a general sensitivity to the environment in a *for better and worse* manner.

Happiness is multifactorial and clearly polygenetic. Most likely, the genetic foundations of happiness can be usefully informed by advances in neuroscientific research. For example, subcortical pathways involving dopamine and opiates are likely to mediate the mutually inhibitory effects of ▶ pleasure and ▶ pain (Leknes, Brooks, Wiech, & Tracey, 2008) and are suggested to generate positive emotions by regulating core components of liking and wanting (Burgdorf & Panksepp, 2006). According to Burgsdorf and Panksepp, there are at least two distinct types of positive emotional states in the brain. One system appears to be primarily involved in reward-seeking (appetitive behavior, wanting) and is associated, at least partly, with psychostimulants (e.g., cocaine and amphetamine). Another system involving the opiate and GABA system appears to be involved in processing sensory pleasures (e.g., hedonic tastes, consummating, liking). Genetic variants impacting on these two systems are likely to constitute important basic molecular foundations of positive emotion. A number of neuropeptide systems (e.g., neurotensin, neuropeptide Y, oxytocin) have also been implicated in positive emotional states (Burgdorf & Panksepp, 2006).

## Implications

**Heritability**. Heritability is a *relative* estimate and refers to individual differences in populations arising from genetic differences, never to genetic influences in individuals. The relativity of the heritability estimate implies that heritability indexes *what is* in a population at a specific time and not what *could be* (Plomin et al., 2001). Accordingly, changes a population's happiness level are entirely compatible even with high heritability of happiness. If genetic influences change (e.g., migration), or environmental influences change (e.g., changes in income, work, educational opportunities, community integration), the relative impact of genes and environment changes as well. As the causes of changes in average levels may be different from the causes of variation, average levels of happiness may increase despite high heritability or no changes in heritability.

**Change**. The longitudinal biometric studies indicate that circumstantial boosts in happiness usually are short-lived. However, at any given moment in time, environmental circumstances are as influential to happiness as genetically based dispositions. How we allocate our time and attention thus greatly influences the current content and quality of our lives. However, individuals create their environments partly due to genes. A substantially stable and largely genetic propensity to happiness suggests that individuals with a disposition to high happiness may seek situations matching their disposition and elicit more supportive behavior in their environment (i.e., nature of nurture).

**Specific Genes**. Happiness results from complex transactions between genetic and environmental factors, and the effect size for any given genetic variant is usually less than 1 % of the total variation. Substantial genetic effects therefore remain to be explained. This gap between the predictive and explanatory power of genes (i.e., *the missing heritability*) constitutes one of the central conundrum of today's genomics.

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## Happiness and Life Expectancy

▶ Life Expectancy and Subjective Well-Being

## Happiness and Social Capital

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### Definition

Social capital refers to ▶ social networks and relations that a person can rely on to achieve a higher level of individual ▶ happiness or ▶ well-being.

### Description

The pursuit of ▶ happiness is an important personal goal that has attracted the attention of many social scientists across various disciplines around the world. In Wilson 1967, Warner Wilson summarized the characteristics of a happy person as follows: "young, healthy, well-educated, well-paid, extroverted, optimistic, worry-free, religious, married, with high ▶ self-esteem, high job morale, modest aspirations, of either sex and of a wide range of intelligence" (p. 294). Wilson's observations have led to four decades of research on happiness. Many researchers have reexamined the factors suggested by Wilson.

Most research on happiness has focused on the relationship between external factors and the level of happiness as summarized by Argyle (2001); Diener, Suh, Lucas, & Smith (1999); Dolan, Peasgood, and White (2008); and Frey and Stutzer (2002). Aside from the basic demographic factors such as age, race, and sex that are commonly discussed, happiness has been found to have significant relationships with other external factors such as having a job, being married (rather than being single, divorced, or separated), good health, and having a religion. ▶ Education has a small but significant correlation with happiness. Associations between the above demographics and external factors and happiness, however, fail to fully account for why people are happy. "[T]heories that focus only on external influences on SWB subjective well-being ignore a substantial source of variation in happiness reports" according to Diener and Lucas (1999, p. 227). Diener et al. (1999) cited studies that revealed demographic variables such as age, sex, income, race, education, and marital status accounted for only 8–20 % of the variance in explaining happiness. Diener et al. (1999, p. 294) concluded, "The past 30 years of research have shown that all of the demographic factors taken together do not account for much variance in SWB." Individual factors (such as genetics, self-esteem, and level of personal control) (e.g., Argyle, 2001; Diener et al., 1999) have also been studied. However, while moderate correlations have been found with these variables, much of the variance is left unexplained. Social capital has been identified as a potential missing component related to happiness (e.g., Helliwell, 2006). Few studies have considered all three forms of social capital described by Coleman as predictors of happiness (see Bjornskov, 2006 for an exception). This was the aim of a paper by Leung, Kier, Fung, Fung, and Sproule (2011) to examine the relationship between happiness and different forms of social capital.

Social capital refers to individual resources accumulated through interpersonal activities that help to develop a strong ▶ social network and ties among individuals and their community (Leung 2002). It is "the idea that individuals and groups can gain resources from their connections to one another (and the type of these connections)" (Paxton 1999, p. 89). Coleman (1988) suggested that three forms of social capital exist: (1) trustworthiness, (2) information channels, and (3) ▶ norms and sanctions. Each of these will be described in turn.

Coleman (1988) initially proposed that ▶ trust can be developed through help given and received among people, where the exchange of favors implies the obligations people have with each other. The literature generally has considered Coleman's initial discussion of trust as too loosely defined and lacking specificity (Allum, Patulny, Read, & Sturgis, 2010). Since Coleman's work, two main types of trust have been identified, namely, ▶ social trust or ▶ trust in people involving trusting individuals (e.g., in one's family, neighborhood, friends, strangers) and ▶ trust in institutions such as the police, health-care systems, banks, and businesses (e.g., Paxton, 1999). In a comprehensive review provided by Dolan et al. (2008), both types of trust were shown to have strong positive relationships with happiness. However, Bjornskov (2006) found that social trust was the only factor among the three types of social capital positively related to ▶ life satisfaction. Assessing obligations, Han, Kim, and Lee (2012) found positive relationship between happiness and perceived helpfulness to others (receiving or giving actual help was not assessed in this study) using a sample from South Korea.

Coleman's (1988) second type of social capital, information channels, refers to people obtaining useful information from others in their social network; hence, knowing more people and forming closer ties with others can enhance efficiency in a person's information gathering process. Basic components of a person's social network that included contacts with relatives (e.g., Powdthavee, 2008) and contacts with friends (Peasgood, 2007) were found to have significant positive relationships with happiness. People can also gather information through participation in political activities such as voting, signing a petition, and boycotting a product as well as participation in civic activities such as joining any type of association or organization or engaging in volunteer work (Putnam, 2000). The literature has presented mixed evidence on the relationship of happiness with belonging to organizations and engaging in volunteer work.

Some studies found correlations but others did not (Dolan et al., 2008). Bjornskov (2006) actually found that participation in organizations was negatively related to life satisfaction.

The third type of social capital Coleman described was norms and sanctions. As Leung et al. (2011) pointed out, norms and sanctions as a form of social capital has been difficult to capture and assess due to vagueness of definitions initially provided by Coleman (1988). He gave little guidance to defining this form of social capital. Bjornskov (2006) assessed social norms through questions about whether behavior such as accepting bribes and cheating on taxes could be justified, but few other measures have been found. Leung et al. (2011) used questions about the level of safety felt at home after dark and walking alone in one's area after dark to capture Coleman's ideas about norms and sanctions, as he suggested "effective norms that inhibit ► crime make it possible to walk freely outside at night in a city…" (p. S104). To measure the type of dishonest behavior suggested by Bjornkov, the authors included survey questions about the likelihood that a lost wallet containing 200 dollars would be returned.

After Coleman's initial work, the literature discussed having a ► sense of belonging as a form of social capital. For example, this has been explored in relation to health outcomes (e.g., Fujiwara & Kawachi 2008) and children's school achievement (e.g., Clift Gore 2005). However, minimal effort can be found in the literature to examine the relationship between happiness and sense of belonging. To our knowledge, the relationship between happiness and sense of belonging measured at different levels (community, province, country) has not been discussed in the literature.

Leung et al. (2011) applied bootstrap hierarchical regression analysis on Canadian data from Statistics Canada's 2003 General Social Survey (GSS), Cycle 17 (Canada, Statistics 2004) to examine the relationship between happiness and social capital variables, after controlling for demographic, external, and individual factors. The first of Coleman's factors, trust and obligations, was found to have several significant relationships with individual levels of happiness. Trust in institutions and trust in people both were significantly related to individual levels of happiness. More specifically, there were positive relationships between happiness and each of the following: trust in the police, health-care system, banks, and local merchants and businesses. Regarding trust in people (or social trust), trust within a person's family had a significant relationship with happiness, but trust in neighbors and strangers was not significant. For the obligation measures, help received from others (but not help given to others) was associated with happiness. Receiving emotional support had a negative relationship with happiness.

Four variables representing Coleman's second type of social capital, information channels, were assessed in the study by Leung et al. (2011): contacts with relatives, contacts with friends, ► political participation, and ► civic participation. Feeling close to more friends and relatives as well as frequency of seeing friends were positively related to happiness, but not communicating with friends and relatives by telephone or frequency of seeing relatives. Political participation in the form of searching for political information and civic participation in the form of membership in a union or professional association were both shown to be negatively related with happiness.

Some of the social norm variables were significantly related to happiness, but others were not. The relation between feeling safe walking home alone was negatively related to level of happiness, but feeling safe being home alone showed a positive trend. Attitude toward dishonest behavior showed no significant relationship in either direction. Overall, the block of variables used to measure norms and sanctions was shown to be marginally significant.

The variables that represent sense of belonging were significantly related to happiness. A closer look at this analysis showed that the stronger the sense of belonging of Canadians to their local community and to the country, the higher the level of happiness. However, no significant relationship was found between a sense of belonging to one's province and the level of happiness.

## Discussion

The study by Leung et al. (2011) was one of the very few attempts in the literature to consider Coleman's three forms of social capital in relation to happiness or well-being. They found significant relationships between happiness and each of the three types of social capital suggested by Coleman (1988), namely, trust and obligations, information channels, and norms and sanctions. Furthermore, they identified sense of belonging as an additional form of social capital that can predict happiness. An important result was that both trust in people and trust in institutions were independently related to happiness. In terms of social and personal trust, the analysis showed that this has an important relationship with happiness, but only trust in people within one's family was significant. Family likely plays an important role in better living within modern society, but the fact that trust in neighbors and strangers does not play a role may support Putnam's argument that people are feeling disconnected (Putnam 2000). Help received was shown to have a significant negative relationship with happiness in the form of emotional support received. Perhaps a person who has received emotional support has experienced difficult times in life and is likely to be less happy.

The results showed that a strong social network of friends appeared to be an important factor related to one's happiness, including seeing friends and having more friends. Furthermore, having more relatives that a person feels close to was also found to be positively related to happiness. The people who searched for information about a political issue reported less happiness than those who did not get involved. A possible explanation for this result is that people who actively sought out information about political issues may have become more aware of problems around the world, hence are likely to be less happy. Another possibility is that people do not search for information about a particular political issue unless they feel worried or discontented about it; otherwise, they just do not bother getting involved.

Feeling safe alone in one's home was associated with feeling happier. However, counterintuitively, feeling safe walking alone after dark correlated with feeling less happy. This may be due to multicollinearity and an artifact of the statistical process. Future research may be needed to shed more light on this. Results showed a positive relationship between happiness and sense of belonging to one's local community and to Canada (but not to one's province). Sense of belonging appears to be an important dimension of social capital to complement Coleman's original suggestions and needs to be further explored.

The findings support social capital as an important piece in predicting happiness in that at least one variable from each of the three types was significantly related. However, the results were not always consistent, in that while some variables significantly predicted higher levels of happiness, others did not, and some were in an unexpected, negative direction. More research is deemed necessary in this area, especially on the relationship between happiness and social norms. While people may not be able to change their internal or external characteristics, some aspects of their social world may be modifiable. In addition to demographic and individual factors such as age, income, and health conditions, future research should include variables representing social capital when exploring what accounts for happiness.

## Cross-References

- ▶ Civic Participation
- ▶ Crime
- ▶ Education
- ▶ Happiness
- ▶ Life Satisfaction
- ▶ Norms
- ▶ Obligations
- ▶ Political Participation
- ▶ Sense of Belonging
- ▶ Social Networks
- ▶ Social Trust
- ▶ Trust
- ▶ Trust in Institutions
- ▶ Trust in People
- ▶ Well-being

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## Happiness and Subjective Health

► Subjective Health and Subjective Well-Being

## Happiness and Work for Europeans and Americans

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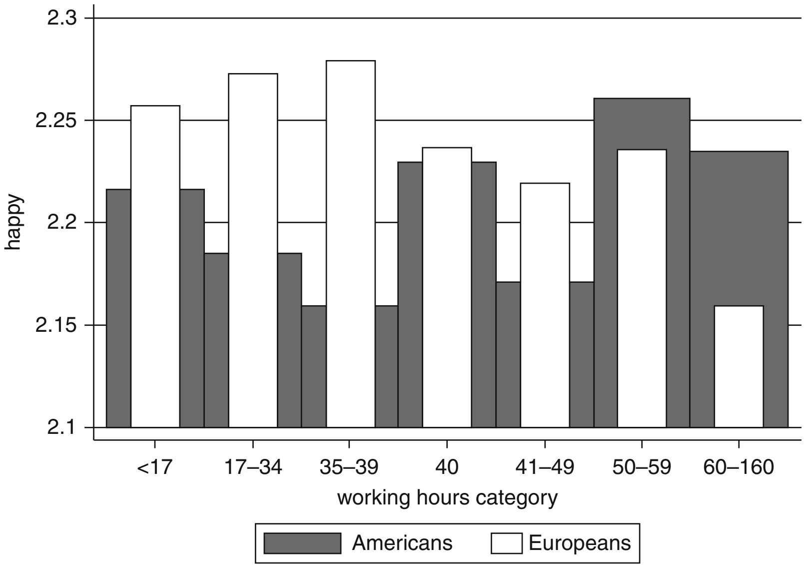
### Definition

Americans work much more than Europeans, and they are happy about it. Americans working long hours are happier than Europeans working long hours. And Europeans working short hours are happier than Americans working short hours. One reason may be that Americans believe more than Europeans that hard work is associated with success. These two ideas are described in greater detail below.

### Description

Americans work 50 % more than the Germans, the French, and the Italians (Prescott, 2004). It has been said many times that Americans live to



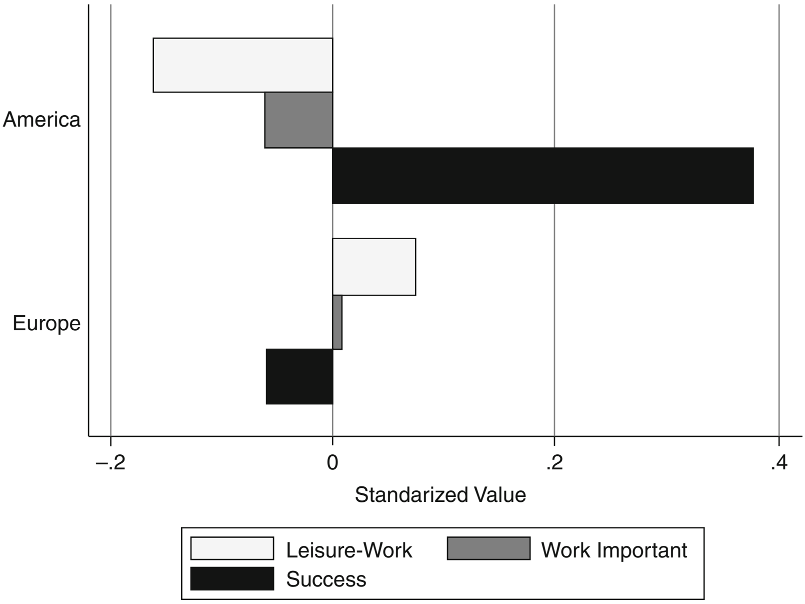
**Happiness and Work for Europeans and Americans, Fig. 1** Happiness by working hours' categories in the USA and Europe. Among people working short hours, Europeans are happier than Americans. On the other hand, among people working long hours, Americans are happier than Europeans (Source: Okulicz-Kozaryn (2011))

**Happiness and Work for Europeans and Americans, Table 1** Description of variables (Source: Okulicz-Kozaryn, 2011)

| Variable | Survey question | Measurement (after recoding) |
|---|---|---|
| Leisure-work | Which point on this scale most clearly describes how much weight you place on work (including housework and schoolwork), as compared with leisure or recreation? How important is leisure time in your life? | 1(It is leisure that makes life worth living)–5(Work is what makes life worth living) |
| Work important | How important is work in your life? | 1(Not at all important)–4(Very important) |
| Success | Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can chose any number in between. Agreement: Hard work brings success | 1(Hard work does not generally bring success – it is more a matter of luck and connections)–10(In the long run, hard work usually brings a better life) |

work and Europeans work to live. Rifkin (2004) even says that "We Americans used to say that the American Dream is worth dying for. The new European Dream is worth living for." But the idea of comparing working hours and ▶ happiness across Atlantic comes from Okulicz-Kozaryn (2011), who found that Americans working long hours are happier than Europeans working long hours; see Fig. 1. There have been many explanations in the literature why Americans would work more than Europeans. These explanations generally fall into one of two groups: economic and cultural.

There are lower tax rates in the USA than in Europe, and hence working more pays more in the USA. Also, US job inequality leads to within-skill wage differences that provide incentives to work longer hours (Michelacci & Pijoan-Mas, 2007a, 2007b). Finally, Europeans are more unionized than Americans. Cultural explanations



**Happiness and Work for Europeans and Americans, Fig. 2** Work values in America and Europe. There is not much difference in attitudes toward work importance and leisure, but Americans believe much more than Europeans that hard work is associated with success (Source: Okulicz-Kozaryn (2011))

mostly refer to the Protestant ethic (Weber, Parsons, & Tawney, 2003).

Why does working more make Europeans less happy than Americans? Do Americans think that work is more important to their lives than Europeans? There is some evidence in the World Values Survey (WVS) that helps answer this question. Respondents were asked several questions as shown in Table 1. For ease of exposition variables were recoded so that a higher value means that work is more important. Responses to these questions were standardized so that they are comparable in Fig. 2.

The Leisure-Work and Work Important variables have higher values in Europe, which suggest that work is more important for Europeans. This is surprising given the conventional wisdom that Americans work more than Europeans because they value work more. One explanation is that Americans value more outcomes of work (success), while Europeans are more concerned with the process (work) itself. The Success variable suggests that for Americans, hard work is (perceived to be) associated with success more than for Europeans. Americans may work more because they believe more than Europeans that hard work brings success. Subjective beliefs matter. We tend to think of labor markets in terms of observable characteristics such as wages and working hours, but there is more to that. The findings reported here contribute to our understanding of labor markets: Americans believe that hard work results in success and they are happier to work more than Europeans.

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# Happiness Cross-Cultural Perspectives

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## Definition

Happiness constitutes an overall judgment of a person's life quality. It consists of varying levels of personal ▶ enjoyment, ▶ satisfaction, and ▶ achievement.

## Description

### Happiness: Cross-Cultural Perspectives

For millennia, philosophers have argued that humans exist in order to be happy and that the search for happiness is the most fundamental goal of human existence (Kingwell, 2000; Lane, 2000; Tefler, 1980). Although everyone is sure that happiness is desirable, people disagree widely about what happiness is and how it is achieved (Veenhoven, 1991; Vanier, 2002). This study seeks to explore how the culture in which people live shapes the way they understand happiness and experience it.

#### Conceptualization

What does happiness consist of? From the Epicureans to contemporary social scientists, considerable confusion reigns regarding its components (Haybron, 2011). To clarify the substance of the concept, we first introduce the three essential accounts of happiness known in the philosophical literature and then propose a framework that conceptualizes it as a multidimensional phenomenon.

According to Georg Henrik Von Wright (1963, 92–94), the first account of a happy life is known as the "Epicurean ideals." It holds that happiness consists in having (as opposed to doing) certain things that give one passive ▶ pleasure. For that individual, therefore, happiness consists in enjoying life by having enough of pleasure-producing things. The well-known Lockean idea that property is the foundation and means of happiness belongs to this hedonistic conception of happiness (Schaar, 1970).

The second ideal leading to a happy life is, according to von Wright, found in the writings of the utilitarian philosophers, who derived happiness from the satisfaction of desires. In such a view, happiness is essentially contentedness – equilibrium between needs and wants on the one hand and satisfaction on the other. The prompt satisfaction of needs produces happiness, while the persistence of unfulfilled needs causes unhappiness (Wilson, 1967). A person's happy life would be one in which as many as possible of his or her needs and desires are met.

A third account of the happy life, as revealed in the philosophical literature, sees happiness neither in passive pleasure, as in the possession of property, nor in the satisfaction of needs. This view, expressed in ▶ Aristotle's concept of ▶ *eudaimonia*, equates happiness with creative activity (McKeon, 1941, 1093–1112). Happiness derives from the fulfillment of one's capacities by doing what one enjoys. As Julia Annas (2004) and John Schaar (1970) point out, happiness is a sense of achievement brought about by man's inner productiveness, and it is the accompaniment of all productive human activity.

Having considered all three of these philosophical accounts of happiness, we propose that the three positive life experiences of *enjoyment, satisfaction*, and *achievement* constitute the three main components of happiness. We also propose that these positive life experiences, by themselves or in combination, shape a person's overall judgment of happiness. Which specific components are most and least essential to the experience of happiness? What particular combinations or mix of these life experiences accompany happiness most and least often? Do the answers to these questions vary across these societies? By addressing these questions, this study seeks to determine systematically whether culture matters in living a life of happiness.

### Measurements

To test the proposed model of happiness across different cultures, we selected a set of four items from the latest wave of the AsiaBarometer (ASB) surveys. During the months of July and August 2008, these ASB surveys were conducted in six countries, each of which represents a different culture in the East or the West. These countries are ▶ Japan, China, and ▶ India from the East and the United States, Russia, and ▶ Australia from the West.

The first item of the set was intended to tap the extent to which people were experiencing happiness at the time of the survey. On the assumption that each individual is the best judge of his/her own state of happiness, the ASB surveys framed the item tapping happiness in such a way that respondents could make the distinction between *feeling happy* and *being happy* and judge the state of their happiness in terms of their own conception of it.

Like other surveys, the ASB surveys asked respondents the straightforward question: "All things considered, would you say you are (1) very happy, (2) quite happy, (3) neither happy nor unhappy, (4) not too happy, or (5) very unhappy?" This particular wording of the question enabled respondents to distinguish between *being happy* and *feeling happy* and allowed them to make an appraisal of the overall situation of their existence. On the basis of the previous research finding that answers to this question are valid and provide reliable estimates of happiness (Ng, 1996), we took such self-reports as the basic dependent variable.

To tap the extent of life enjoyment, the ASB surveys asked: "How often do you feel you are really enjoying life these days – often, sometimes, rarely, or never?" To tap the extent of achievement in life, the same surveys asked: "How much do you feel you are achieving what you want out of your life – a great deal, some, very little, or none?" In these questions, enjoyment and achievement represent different qualities of a whole life. To measure satisfaction, the ABS asked respondents to evaluate their life as a whole on a 5-point verbal scale ranging from "very satisfied" to "very dissatisfied."

In every country, overwhelming majorities of over 90 % were able to evaluate their ▶ subjective well-being in terms of happiness, enjoyment, accomplishment, and satisfaction (see Table 1). Among the four components chosen for our analysis, happiness registered the highest rate of responses in four of the six countries, while satisfaction registered the lowest rate of responses in five of the six countries. Only in Japan, accomplishment turned out to be the most difficult to judge. Despite these small differences, all six countries are alike in that very small proportions, ranging from 1 to 7 %, were incapable of evaluating their happiness and the other feelings of well-being we proposed as its constituents.

### The Experience of Happiness: Types and Consequences

Our review of the philosophical literature on happiness identified its three key components: the enjoyment of life, the achievement of goals, and the satisfaction of basic needs. Do contemporary publics equate happiness with the experience of only one or two components? Or do they equate it with the presence of all three components? If they do, which ones form the most and least popular conceptions of happiness among the popular masses of six different countries?

In this section, we explore these questions by linking the experience of happiness to that of enjoyment, achievement, and satisfaction in isolation and in combination. Specifically, among those who judged their lives as happy, we calculated the percentages experiencing only one component, two components, or all three components of enjoyment, achievement, and satisfaction. We also calculated those experiencing none of these components. Comparing these percentages, we identified the most and least popular conceptions of happiness in each country.

A careful scrutiny of the data reported in Table 2 indicates that not any one of these three components alone allows many people to live a happy life in all six countries. When all these countries are considered together, one out of eighteen (5.5 %) people reports happiness while experiencing only one of the three components. In two countries, the USA and Australia, the

**Happiness Cross-Cultural Perspectives, Table 1** Self-assessments of happiness

| Countries | Very Unhappy | Not too happy | Neither happy nor unhappy | Quite happy | Very happy | Happy (A) | Unhappy (B) | Balance (A-B) | N |
|---|---|---|---|---|---|---|---|---|---|
| United States | 1 % | 5 % | 12 % | 46 % | 37 % | 83 % | 6 % | +77 % | 1,002 |
| Russia | 2 | 12 | 36 | 43 | 8 | 51 | 14 | +36 | 1,005 |
| Australia | 1 | 4 | 7 | 52 | 36 | 88 | 5 | +82 | 1,000 |
| Japan | 1 | 3 | 32 | 45 | 19 | 64 | 4 | +60 | 1,012 |
| China | 1 | 3 | 30 | 48 | 18 | 66 | 4 | +62 | 1,000 |
| India | 1 | 3 | 15 | 35 | 47 | 82 | 3 | +79 | 1,052 |

Source: 2008 AsiaBarometer Surveys

**Happiness Cross-Cultural Perspectives, Table 2** Patterns of experiencing happiness in terms of enjoyment, achievement, and satisfaction

| | Number of dimensions | | | |
|---|---|---|---|---|
| Countries | None | One | Two | Three |
| United States | 0.4 % | 1.3 % | 9.3 % | 89.0 % |
| Russia | 1.7 | 7.8 | 10.9 | 69.6 |
| Australia | 0.3 | 1.5 | 11.0 | 87.2 |
| Japan | 1.7 | 7.1 | 25.7 | 65.6 |
| China | 3.5 | 12.0 | 32.6 | 51.8 |
| India | 0.6 | 5.9 | 21.2 | 72.3 |

Source: 2008 AsiaBarometer Surveys

**Happiness Cross-Cultural Perspectives, Table 3** Patterns of experiencing happiness and being very happy

| | Number of dimensions | | | |
|---|---|---|---|---|
| Countries | None | One | Two | Three |
| United States | 0 % | 2 % | 20 % | 43 % |
| Russia | 0 | 1 | 5 | 14 |
| Australia | 0 | 4 | 18 | 41 |
| Japan | 2 | 6 | 15 | 28 |
| China | 0 | 9 | 17 | 28 |
| India | 0 | 16 | 36 | 57 |

Source: 2008 AsiaBarometer Surveys

figures are even smaller, 1.3 and 1.5 %, respectively. In other countries, they range from 7 % in Japan to 12 % in China. Thus, with respect to large majorities, ranging from 88 to 98 % of the mass publics surveyed, happiness constitutes a multifaceted phenomenon with more than one characteristic.

Nonetheless, multidimensional conceptions of happiness vary considerably across the countries surveyed. Those are most prevalent in the USA and Australia, two English-speaking Western nations, and least prevalent in China and Japan, two countries in Confucian Asia. In these two Confucian countries, those reporting living a happy life with experiencing only one or two components of well-being constitute substantial minorities ranging from 33 % in Japan to 45 % in China. The corresponding figures for the two Western countries are 11 % for the USA and 13 % for Australia. When these two sets of figures are compared, it is apparent that culture matters in the experience of happiness; people in Confucian Asia are less likely to experience happiness as a multidimensional phenomenon than their peers in the West.

Does the way in which people experience happiness affect their level of happiness? Would the incidence of experiencing all three dimensions of happiness correspond to happier lives than for those experiencing fewer dimensions? In Table 3, we explore this question by linking the experience of a “very happy” life to differing dimensional conceptions. In every country, those living “very happy” lives are most numerous in the multidimensional category and least numerous in the unidimensional category. In every country, the difference between these two categories exceeds by more than 10 percentage points in favor of the former.

Nonetheless, a careful scrutiny of the data in Table 3 indicates cultural differences in the way multidimensional conceptions affect the unqualified experience of happiness. In the USA, Australia, and India, for example, multidimensional conceivers lead two-dimensional conceivers in reporting unqualified happiness by very large margins of over 20 percentage points.

In Russia, Japan, and China, on the other hand, the former lead the latter by much smaller margins of less than 15 percentage points. This seems to suggest that multiple conceptions are less instrumental in promoting a life of unqualified happiness in Confucian Asia than in the English-speaking Western nations.

### The Essentiality of Components

In all six countries, we have found that enjoyment of life, the achievement of goals, and the satisfaction of basic needs do constitute the three essential components of a happy life. Of these three components, which is most essential to living a happy life? Do the six countries agree or disagree regarding the most essential component of happiness? We examined these questions by estimating and comparing the percentage of people becoming happy with the experience of each component, when the effects of the two other components are statistically controlled for. We calculated this percentage by means of the multiple classification analysis (MCA), which is capable of estimating the value of the dependent variable for each category of the independent variable, controlling for all other independent and control variables (Andrews et al., 1973).

Table 4 reports a great deal of cross-national variation in the extent to which each of the three components contributes to happiness independent of the other two. In Russia, for instance, there is only a 5-percentage-point difference between the highest and lowest of the ratings of the three components. This means that all three components are almost equally essential to a happy life in that country. In striking contrast, in Australia and China, the difference between the two extreme ratings is over 30 percentage points. In these two countries, enjoyment contributes to happiness significantly more than the achievement of life goals.

A careful scrutiny of the percentages reported in Table 4 also reveals four patterns of valuations. In the richest countries on earth – the USA and Japan – life satisfaction and goal achievement are rated, respectively, as the most and least essential components. In Australia and China, on the other hand, enjoyment is the most essential, and goal achievement the least essential. In Russia and India, in contrast, achievement was the most essential component, but they differ on the least essential component: enjoyment for the former and life satisfaction for the latter. On the whole, patterns in the six countries disagree more on the most essential component than on the least essential one. While each component is the most essential component in two different countries, goal achievement is the least important in four out of the six countries – the USA, Australia, Japan, and China.

**Happiness Cross-Cultural Perspectives, Table 4** The extent to which each of three components makes people happy

| Countries | Enjoyment | Achievement | Satisfaction |
|---|---|---|---|
| United States | 33 % | 21 % | 35 % |
| Russia | 23 | 28 | 26 |
| Australia | 50 | 19 | 26 |
| Japan | 32 | 11 | 35 |
| China | 43 | 9 | 17 |
| India | 20 | 31 | 12 |

Source: 2008 AsiaBarometer Surveys

### Summary and Conclusions

In every country and culture, it is common for people to desire to live lives of happiness. What constitutes a happy life? Do popular conceptions of happiness and its sources vary across culturally different societies? Utilizing the 2008 round of the ASB surveys conducted in the six countries scattered over four different continents, we sought to address these questions, which have not been adequately addressed in previous research, by analyzing reports of a happy life among the ordinary citizens in the six culturally different countries (Uchida, Norasakkunkit, & Kitayama, 2004).

In all six countries, happiness is a positive assessment of a whole life, the holistic judgment of life experiences that recognizes not only the enjoyment of living but also the achievement of goals and/or the satisfaction of desires and needs (Beneditt, 1974; Cameron, 1975; Lu, 2001; Summers, 1996). Feelings of enjoyment alone do not lead to such a life among the vast majority of the citizens in all six countries. When these citizens experience enjoyment together with achievement and satisfaction, then they are happy or very happy with their lives. *The preponderance of multiple conceptions in all the six countries surveyed poses a direct challenge to the hedonistic, single dimensional conception of happiness that is most commonplace in the affluent West* (Bradburn, 1969; Bradburn & Capilovitz, 1965; Campbell, 1981).

In all countries, those who experience it in multiple terms are far more likely to live a *very happy* life than those who do not. Yet, such multiple conceptions of happiness are significantly less numerous in Confucian countries than in English-speaking countries of the West. In the former, moreover, they are much less likely to experience unqualified happiness rather than in the latter. These findings testify to notable cross-cultural differences in conceptions of happiness (Diener & Suh, 2000).

Of the three components, the achievement of life goals constitutes the *least essential* component in most of the countries surveyed. On the *most essential* component, however, there is little agreement among these countries. From one pair of countries to another, a different component emerges as the most important. As the most essential component varies across countries, the explanatory or predictive power of the proposed three-component model varies considerably across them. Yet, the model is found to perform better in Western countries than in Asian countries. This also suggests cross-cultural differences in the conception and sources of happiness.

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▶ Plato

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# Happiness Findings Archive

▶ Databook of Happiness

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# Happiness in Algeria

▶ Algeria, Personal Well-Being Index

## Happiness in Australia

▶ Australia, Personal Well-Being Index

## Happiness in China

▶ China, Personal Well-Being Index

## Happiness in Croatia

▶ Croatia, Personal Well-Being Index

## Happiness in Islam

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### Synonyms

Islam happiness

### Definition

This short entry proposes to depict the meaning of ▶ happiness in Islam. In terms of methodology, it uses a holistic approach to the Islamic tradition. It basically refers to the main sources of this ▶ religion, the Holly Qur'an and the *Hadith* (the Prophet's sayings), then writings of some famous scholars (e.g., Esposito, 1998 for a general historical review). Most of them belong to Philosophy (*Falsafa*) and Sufism.

### Description

#### The Essentials of Happiness in Major Sources of Islam

The religion of Islam is accepting and being faithful to the teachings of God which He revealed to His last prophet, Muhammad. These teachings are prescribed in the Qur'an and the *Sunnah* (sayings and doings of the Prophet). Additional sources include analogical reasoning and the consensus of the community.

In terms of belief, the Muslim should believe in One God; all of his messengers and previous books and revelations; the angels; the Last Day of Judgement; and finally that what a human being faces in his life is God's will.

A first conclusion with regard to happiness in this system is that God is the origin of all good. He is the supplier and the Savior. His continuous presence comforts one's life. The Qur'an describes this state by saying, "*And when My servants question thee concerning Me, then surely I am nigh. I answer the prayer of the suppliant when he crieth unto Me. So let them hear My call and let them trust in Me, in order that they may be led aright*" (Qur'an, 2:186).

God metaphorically presents Himself in the Qur'an as the light of all existence, and it is that light that guides humans to true happiness. He says, "*Allah is the Light of the heavens and the earth. The similitude of His light is as a niche wherein is a lamp. The lamp is in a glass. The glass is as it were a shining star. (This lamp is) kindled from a blessed tree, an olive neither of the East nor of the West, whose oil would almost glow forth (of itself) though no fire touched it. Light upon light. Allah guideth unto His light whom He will. And Allah setteth forth for mankind similitudes, for Allah is Knower of all things*" (Qur'an, 24:35).

The Qur'an promises not only Heaven after life for those who act according to the words of God but also good life on earth: "*Whosoever doeth right, whether male or female, and is a believer, him verily we shall quicken with good life, and We shall pay them a recompense in proportion to the best of what they used to do*" (Qur'an, 16:97).

He warns those who turn away from his remembrance unhappiness in life and after death: "*But he who turneth away from remembrance of Me, his will be a narrow life, and I shall bring him blind to the assembly on the Day of Resurrection*" (Qur'an, 20:124).

Man occupies the position of God's viceroy on earth. In the Islamic narrative of the Creation of Adam, the Qur'an recounts, "*And when thy Lord said unto the angels: Lo! I am about to place a viceroy in the earth, they said: Wilt thou place therein one who will do harm therein and will shed blood, while we, we hymn Thy praise and sanctify Thee? He said: Surely I know that which ye know not*" (Qur'an 2:30). His life is then purposeful. But when it comes to his relation with the Creator, this must be of total submission. Submission to God has no prejudice to human beings but is rather presented as an act of recognition and gratefulness to all His gifts. He challenges human's intelligence by saying, "*He it is Who hath created for you ears and eyes and hearts. Small thanks give ye! (78) And He it is Who hath sown you broadcast in the earth, and unto Him ye will be gathered. (79) And He it is Who giveth life and causeth death, and His is the difference of night and day. Have ye then no sense?"* (80) (Qur'an, 23:78–80).

So, human beings, though holding the high rank of God's viceroy on earth, "*And indeed, We have honoured the Children of Adam*" (Qur'an, 17:70), cannot live a peaceful and a happy life without believing in the sustaining power. Moreover, the responsibility of humans is in line with this high rank among all creatures. He is responsible of all his sayings and doings and will be questioned on everything in the Last Day of Judgement: "*Lo! We create man from a drop of thickened fluid to test him; so We make him hearing, knowing*" (Qur'an, 76:2).

Accordingly, ▶ gratitude should be a basic quality of humans: "*Who have believed and whose hearts have rest in the remembrance of Allah. Verily in the remembrance of Allah do hearts find rest!*" (Quran, 13:28). Gratitude and humbleness should be expressed toward people too. The Qur'an recommends, "… *(Show) kindness unto parents, and unto near kindred, and orphans, and the needy, and unto the neighbour who is of kin (unto you) and the neighbour who is not of kin, and the fellow-traveller and the wayfarer and (the slaves) whom your right hands possess. Lo! Allah loveth not such as are proud and boastful, (36) Who hoard their wealth and enjoin avarice on others, and hide that which Allah hath bestowed upon them of His bounty. For disbelievers We prepare a shameful doom; (37)*" (Qur'an, 4:36–37). So, arrogance is the source of all ills.

It is to be concluded that human nature as outlined in the Qur'an desperately needs guidance in life and that the relationships one entertains with the Creator is the first path toward happiness on earth and salvation after death. The two dimensions, or simply types of happiness, are interrelated in the Qur'anic vision. This is corroborated by a popular Prophet's saying: "Conduct yourself in this world as if you are here to stay forever, and yet prepare for eternity as if you are to die tomorrow."

## The *Falsafa* View of Happiness

Theoretical quests which are intimately linked to the Qur'an and the *Hadith* have accompanied the birth of Islam. They were further refined and extended as a result of Islam's meeting with other cultures. For instance, the movement of *Falsafa* (philosophy) continued and recreated Greek philosophical thought. Happiness and social and political conducts were among the central themes of discussion (Leaman, 1998). However, the shared frame of reference was the conception of "humans as ethical beings searching for happiness through the improvement of their natures and modes of conduct" (Geuerrero, 2011). Happiness is conceived as transcendence beyond the physical or the sensual to achieve the long-lasting eternal happiness which is with the mercy of God and His heavens. So, earthly life is just a path toward the eternal home. Yet, the dichotomy between the two types of happiness is not easy to resolve as it may appear. Big discrepancies could be noticed among Muslim scholars in approaching this issue.

For instance, Al Farabi or Alpharabius (870–950) entitled one of his treaties "The attainment of happiness." It discussed lengthily how individuals and nations could reach happiness. Deeply inspired by ▶ Aristotle, he proposed four kinds of happiness: theoretical virtues (knowledge naturally embedded in humans and those acquired through meditation, investigation and inference, instruction and study), deliberated virtues, moral virtues, and practical arts Al Farabi http://www.muslimphilosophy.com/farabi/accessed 04 March, 2012.

Ibn Miskawayh (about 932–1030) displayed a main interest in ethics and how to reach ultimate happiness. He was deeply influenced by Aristotle and Neo-Platonism and held that happiness was the common aim for all human beings. Nevertheless, true happiness could not be found outside the boundaries of the divine word. Thus, the triumph is to succeed life tests and reach God's blessings.

Ibn Misquawayh agrees with Aristotle, clearly in opposition to ► Pythagoras, Hippocrates, and ► Plato, in that man's happiness is in the perfection of both his spirit and body. Both Ibn Misquawayh and Aristotle maintain that the attainment of happiness is also possible in this world. Such things as health of body, moderation of temper and senses, wealth, good reputation, success in affaires, correctness of beliefs, moral virtues, and merited behavior are a part of happiness, but the ultimate happiness is obtained through the accomplishment of all of the perfections related to spirit and body (Alavi, 2009; Ibn Maskawaih (died in, 1030).

Ibn Bajja or Avempace (about 1085–1139) is one of the main representatives of the *falsafa* in the Muslim West. In the *Regimen of the Solitary*, he maintained that the philosopher should isolate himself intellectually from the corrupted community, in order to attain the ultimate happiness of theoretical life. In *The Conjunction of Intellect with Man*, he argues that this ultimate happiness consists in the highest perfection of the human intellect (Geoffroy, 2011; Montada, 2012).

But, is this type of happiness accessible to ordinary people too? Ibn Rushd or Averoes (1126–1198) proposes that there are a variety of routes to God and happiness, all equally valid, and that the route which the philosopher can take is one based on the independent use of reason (Leaman, 1998).

Ibn Sina or Avicenna (about 981–1037) psychological insights led him to agree with Aristotle that humans possess three types of psyches. The "vegetative" and "animal" psyches help people to grow, to reproduce, and to acquire knowledge through senses but bind them to earth and lead them to seek sensual pleasures. Meanwhile, the "rational psyche" helps them ascend on the way to reach true happiness and connect with God. He presented through his numerous books the different possible links between the soul and the body and as a "medical scientist" proposed diverse healing techniques for psychosomatic illnesses (http://www.muslimphilosophy.com/sina/).

It is to be concluded that the use of the intellect and reason is the most important means toward happiness for *Falsafa* scholars in general. However, the word *aql* (reason) itself in Arabic language means *to tied to* some limitations, methodological and maybe linguistic ones. So, the freedom of the *aql* is constrained and would not allow seekers of the absolute truth or wisdom to reach it.

## "The Purification of the Soul": A Way to Reach True Happiness

The Sufi movement believes that reaching "truth" or ultimate happiness can only be done through following one's heart (Vogel, 2012). In looking at Sufism, one should distinguish between the doctrine as a whole and the practical devotion to become a *Sufi* (Nicholson, 1914).

In Arabic "Sufism" comes from the word "*Suf*," wool. Wearing inexpensive woolen clothes was a sign of refusing luxury. It means also purity. This way to meet happiness is usually described as a journey or a pilgrimage (Nicholson, 1914). The famous theologian and philosopher Al-Ghazali (1909) described in the *Confessions* the "meaning crisis" which led him to become a Sufi after abandoning his teaching career:

> Ten years passed in this manner. During my successive periods of meditation there were revealed to me things impossible to recount . . . I learnt from a sure source that the Sufis are the true pioneers on the path of God . . . The degree of proximity to Deity which they attain is regarded by some as intermixture of being (haloul), by others as identification (ittihdd), by others as intimate union

> (wasl). But all these expressions are wrong. . .Those who have reached that stage should confine themselves to repeating the verse What I experience I shall not try to say; Call me happy, but ask me no more. (pp. 47–48)

Al-Hallaj (about 858–922) is an "intoxicated" Sufi who in the moment of ecstasy is so overcome by the presence of the divine that awareness of personal identity is lost (Fiegenbaum, 2012). His use of an extravagant language such as "Ana al-haqq" ("I am the Truth"– i.e., God) owed him torture to death (Massignon, 1975).

However, we learn from history that Rabi'a al-Adawiyya (born about 717) was one of the earliest female mystics in Islam (El Sakkakini, 1982). She completely abandoned a life of materialistic pleasures to the love of God. The following verses are examples of her dialogue with Him:

> *I love You with two loves-a selfish love*
> And a Love that You are worthy of.
> As for the selfish love, it is that I think of You,
> To the exclusion of everything else.
> And as for the Love that You are worthy of,
> Ah! That I no longer see any creature, but I see only You!
> There is no praise for me in either of these loves,
> *But the praise in both is for You.* (translated in http://sufimaster.org/adawiyya.htm, accessed March, 2012)

The Andalusian mystic Ibn Arabi (1165–1240) marked the history of Sufism. His capacity to penetrate the deepest regions of the soul surpassed some modern psychologists. Halligan (2001) commented, "The findings of Carl Jung parallel some of the revelations of the mystic, but Ibn Arabi goes farther than Jung into the Active Imagination as both conscious-willed-and spontaneous, autonomous process" (p. 275).

Furthermore, Ibn Arabi's writings had a profound effect on Islamic thinkers, but most of them remained unknown in the West until modern times (Chittick, 2008; Chodkiewicz, 1993). Since 1983, in recognition of his contributions, a group of scholars have been regularly publishing the *Journal of the Muhyiddin Ibn 'Arabi Society* (http://www.ibnarabisociety.org/).

Ibn Arabi agrees with many of his predecessors that utmost happiness is that of the soul. Happiness could solely be found in the process of aspiring *for the* truth, reality, rightness – *the haqq. This* "means knowing the truth and reality of the cosmos, the soul, and human affairs on the basis of the Supreme Reality, *al-Haqq*; knowing the Supreme Reality inasmuch as it reveals itself in the *haqq*s of all things; and acting in keeping with these *haqq*s at every moment and in every situation. In short, the 'realizers' (*muhaqqiqûn*) are those who fully actualize the spiritual, cosmic, and divine potential of the soul" (Chittick, 2008). As Chittick (2008) further explains, ". . .Ibn Arabi, like many of the Islamic philosophers, holds that real knowledge cannot come from imitating others, but must be discovered by realization, which is the actualization of the soul's potential." In contrast to other philosophers, he maintains that the utmost realization can only be achieved by following in the footsteps of the prophets (Chittick, 2008; Chodkiewicz, 1993). So, the issue here is not a logical or epistemological one inasmuch as it is an ontological and existential quest (Chittick, 2008). In this quest, he does not bother much to stick exclusively to one single faith system as they all lead to the same truth. The following passage may help discover the distinctiveness of this humanism:

> *My heart has become capable of every form: It is a pasture for gazelles and a convent Christian monks,*
> And a temple for idols and the pilgrim's Ka'ba and the tables of the Tora and the book of the Qur'an.
> I follow the religion of ▶ Love, whatever way Love's camels take,
> *That is my religion and my faith.* (Ibn Arabi, quoted by Halligan, 2001, p. 275)

Explaining what Ibn Arabi means by happiness is very difficult if we do not understand his theoretical system (details could be found elsewhere, e.g., Chodkiewicz, 1993, Chittick, 2008, and Ibn Arabi's translated works). Nonetheless, the way to genuine happiness remains from this standpoint that of the "realizers" (*muhaqqiqûn*), in the search for *Haqq*, and in actualizing the spiritual, cosmic, and divine capacity of the Soul. As if reaching happiness is the duty of man. He has no choice but to ascend its ladder if he really understands and assumes his role on earth. It is his duty because human being is the manifestation of the ▶ wisdom of the God, the all-comprehensive name. He holds the role of God's vicegerent on Earth, so the intermediary between God and creation. He is "the spirit that animates the cosmos": "… man is the spirit of the cosmos, and the cosmos is the body. By bringing all this together, the cosmos is the great man, so long as man is within it. But, if you look at the cosmos alone, without man, you will find it to be like a proportioned body without a spirit" (Ibn Arabi. *El Foutouhat El Makkiah*. Published in Arabic in: (http://www.alwaraq.net/Core/waraq/coverpage?bookid=27&option=1); Chittick, 2008).

According to this view, true happiness is the process of deep transformation of one's conduct in sticking to virtue to the extent of his capacity.

## Conclusion

All adherents of the Islamic perspective would agree that happiness is twofold: one that is attainable on earth and a second one to be attained in the hereafter. But, both types complement each other. Technically, the Islamic schools present a variety of routes to happiness. Philosophers have shown that the issue is not in following the teachings blindly but in understanding them and deeply reasoning on them. Meanwhile, the Sufis would insist that human wealth is that of the soul. So, cultivating this later would lead to everlasting happiness. However, these views seem reconcilable and could provide an interesting theoretical alternative. Using both the affect and the intellect is needed today in a materialistic and consumerist world. Hopefully, this essay would attract researchers' attention to the voluminous productions by Muslim scholars which remain to a great extent unknown to the scientific community.

## Cross-References

- ▶ Democracy and Islam in the Middle East
- ▶ Good Life, Theories of
- ▶ Moral Theories
- ▶ Virtue Ethics
- ▶ Well-Being, Philosophical Theories of

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## Happiness in Nations

▶ National Well-Being Indicators

## Happiness in the Amazonas

▶ Andean and Amazonian Native Conceptions of Well-Being

## Happiness in the Andes

▶ Andean and Amazonian Native Conceptions of Well-Being

## Happiness Item

▶ Happiness Measures

## Happiness Levels Stability

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### Synonyms

Happiness set point; Traitlikeness of happiness

### Definition

The degree to which happiness tends to remain at the same level over time.

### Description

#### Presumed Stability of Happiness

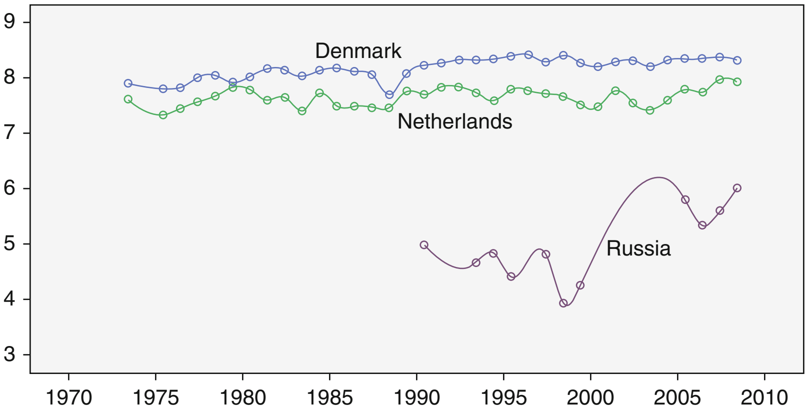
One of the ideological foundations of the modern welfare states is the belief that people can be made happier by providing them with better living conditions. This belief is challenged by the idea that happiness tends to remain at the same level and will therefore hardly change when living conditions improve. This counter intuitive thought draws to two theories of happiness.

One theory holds that ▶ happiness is a fixed "trait," rather than a variable "state." This theory figures both at the individual level and at the societal level. The individual level variant depicts happiness as an aspect of personal character, rooted in inborn temperament or acquired disposition and is commonly referred to as the "set point" theory of happiness. The societal variant sees happiness as a matter of national character, embedded in shared values and beliefs. This variant has been called "folklore theory." Both variants imply that a better society makes no happier people.

The second theory holds that happiness is a matter of comparison and that different standards of comparison are involved, such as described in Michalos (1985) "▶ multiple discrepancies theory" of happiness. In that context it is then assumed that standards tend to shift over time and that these shifts nullify the effects of improvements in living conditions. This is seen to lead us in a "hedonic treadmill," where we remain equally happy subjectively in spite of progress in an objective sense (e.g., Brickman & Campbell, 1971).

This idea of stable happiness figures in several discussions, one of which is the debate on the value of economic growth. In that context the "▶ Easterlin Paradox" holds that average happiness in nations has remained at the same level over the last decade in spite of constant economic growth (Easterlin, 1974).

**Happiness Levels Stability, Fig. 1** Change of average happiness in three nations (Source: World Database of Happiness, Collection Happiness in Nations Veenhoven, 2012b)



## Observed Changes of Happiness

The variability of happiness over time has been investigated at two levels, at the micro level of individuals and at the macro-level of nations. An overview of the research literature is available in the Bibliography of the ▶ World Database of Happiness (Veenhoven, 2012a), in section "Prevalence of Happiness" (code D), respectively, in the subsections "How Stable Is Happiness" (code Dc) and "Trend in National Happiness" (Code De01.01).

### Change of Individual Happiness

Follow-up studies show that happiness is typically quite stable on the short term, but not in the long run, neither relatively nor absolutely. The year-to-year correlation between self-reports of happiness is about 0.50, but over a period of 10 years, the correlation drops to less than 0.30 (e.g., Ehrhardt, Saris, & Veenhoven, 2000).

Happiness *does* change in reaction to ▶ life events, such as marriage, bereavement, illness, and unemployment. Some of these effects are short lived, such as in the case of financial windfalls (Gardner & Oswald, 2001), while others are lasting, such as typically in the case of unemployment (e.g., Clark, Diener, Georgellis, & Lucas, 2008). Another typical change of this kind is the decline of happiness in the year before death (Gerstorf & Wagner, 2010).

### Change of Average Happiness in Nations

Trend studies on average happiness in nations show more stability, the earliest studies in particular. Happiness has remained at about the same level in the USA between its first assessment in1948 and the most recent in 2010. Likewise, average happiness changed little in Japan since the first survey in 1958. These first findings were taken as a general pattern, among other by Easterlin. Yet later time series in more countries over longer periods showed that happiness has risen in most countries. A recent analysis of 197 time series in 66 nations revealed a change to the better in two-third of these cases (Veenhoven & Vergunst, 2013).

Some examples of long-term change of average happiness in nations are presented in Fig. 1. In Denmark, average happiness raised half a point on scale 0–10 over this period, while in the Netherlands, average happiness has fluctuated around the same level of 7.5 until the year 2000 but has increased since. The Russian data show ups and downs and as such most clearly contradict the idea of immutable happiness.

Some of these changes in average happiness in nations are clearly linked to particular events. The dip in happiness in Russia in the late 1990s coincided with the "Ruble crisis," and the decline of happiness since 2008 in Greece, Spain, and Portugal is also a reaction to the economic recession. The effects of economic growth are less well visible. Still the above-mentioned analysis of Veenhoven and Vergunst revealed a correlation of 0.20 between ▶ economic growth and change of happiness in nations.

A complete overview of time trends is available in the collection "Happiness in Nations" of the ▶ World Database of Happiness (Veenhoven, 2012b). A selection of time series of at least 5 data point in 20 years is available on the trend report of average happiness in nations (Veenhoven, 2012c), which is periodically updated.

### Theoretical Implications

These findings do not support the above-mentioned theories of happiness, happiness is clearly not a fixed trait, and reference shifts do not nullify the effects of all progress. The findings fit better with the ▶ livability theory of happiness, discussed elsewhere in this encyclopedia.

## Cross-References

- ▶ Easterlin Paradox
- ▶ Happiness
- ▶ Happiness Measures
- ▶ Need Theory
- ▶ Set Point Theory
- ▶ World Database of Happiness

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# Happiness Measures

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## Synonyms

Happiness item; Happiness scales; Indicators of happiness

## Definition

Assessment of how much people like the life they live.

## Description

### Concept of Happiness

The word “happiness” is used for different meanings, and these meanings all require different measures. This lemma is about happiness in the sense of subjective enjoyment of one's life as a whole that is also called "life satisfaction."

Two "components" of happiness are distinguished within this concept: hedonic level of affect (the degree to which pleasant affect dominates) and contentment (perceived realization of wants). These components represent respectively "affective" and "cognitive" appraisals of life and are seen to figure as subtotals in the encompassing evaluation of life, called "overall" happiness.

## Questions on Happiness

Thus defined, happiness is something that we have in mind, and things that are in our mind can be assessed using questioning. Questions on happiness can be presented in various ways:

### Direct Versus Indirect Questions

A common direct question is, "Taking all together, how happy would you say you are?" Indirect question rather taps related things, such as, "Do you think that you are happier than most people in this country" or "Do you often sing when in the shower?" An assumed advantage of indirect questioning is that this will reduce response bias. A disadvantage is that something other than happiness is measured.

### Single Versus Multiple Questions

Rather than using single questions as in the example above, one can ask about the same thing using multiple questions. Series of questions on happiness are referred to as "scales," and the most often used questionnaire is Diener, Emmons, Griffin, and Larsen (1985) Satisfaction With Life Scale (SWLS).

An advantage of single questions is that it is clear what is being measured and hence that one can easily see whether that is happiness as subjective enjoyment of one's life as a whole (face validity). A disadvantage is that the particular words used in the question may not be interpreted in the same way by all respondents. An advantage of multiple questions is that such differences in interpretation balance out, though the disadvantage is that the questions may not quite address the same thing, such as the last item in Diener's SWLS. This question is whether one would change anything if one could live ones life over again. The assumption is that happy people will live their life over again in the same way as before, yet happy people can also be open to live another sort of life, since the happy tend to be open for new experiences.

### One Time Versus Multiple Moment

The above-mentioned single question calls for a global estimate of their happiness from the respondent, which may involve various biases (Kahneman, 1999). An alternative is to ask repeatedly how happy one feels at the moment and to compute an average. This is referred to as the Experience Sampling Method (ESM), a variant of which is the Day Recall Method (DRM). These methods can be used only to determine the affective component of happiness, referred to above as "hedonic level of affect."

### Affect Balance Scales

Hedonic level of affect can also be measured indirectly by asking people about particular feelings in the recent past, such as how often they felt "cheerful" or "blue." The reported number of negative affects is then subtracted from the number of positive experiences. A common scale of that kind is Bradburn's (1969) 10-item "Affect Balance Scale." This technique fits well with Bentham's (1789) classic notion of happiness as "the sum of pleasures and pains."

## Validity

Critics have suggested that responses to questions on happiness actually measure other phenomena. Rather than indicating how much the respondent enjoys life, answers will reflect the respondents' normative notions and desires.

### No Notion

One of the misgivings is that most people have no opinion at all about their happiness. They will be more aware of how happy they are supposed to be and report that instead. Although this may happen incidentally, it does not appear to be the rule. Most people know quite well whether or not they enjoy life. Eight out of ten Americans think about this every week. Responses on questions about happiness tend to be prompt. Nonresponse on these items is low, both absolutely (±1 %) and relatively to other attitudinal questions. "Don't know" responses are also infrequent.

A related assertion is that respondents mix up how happy they actually are, with how happy other people think they are, given their situation. If so, people considered to be well-off will typically report they are very happy, and people regarded as disadvantaged should characterize themselves as unhappy. This pattern is observed sometimes, but it is not general. For instance, in the Netherlands, a good education is seen as a prerequisite for a good life, but the highly educated appears to be slightly less happy in comparison to their less educated counterparts.

### Colored Answers

Another objection concerns the presence of systematic bias in responses. It is assumed that questions on happiness are interpreted correctly, but that responses are often false. People who are actually dissatisfied with their life will tend to answer that they are quite happy. Both ego defense and social desirability would cause such distortions.

This bias is seen to manifest in overreport of happiness; most people claim to be happy, and most perceive themselves as happier than average. Another indication of bias is seen in the finding that psychosomatic complaints are not uncommon among the happy; however, these findings allow other interpretations as well.

Firstly, the fact that more people say they are happy than unhappy does not imply overreporting of their happiness. It is quite possible that most people are truly happy.

Secondly, there are also good reasons why most people think that they are happier than average. One such reason is that most people are like critical scientists and think that unhappiness is the rule.

Thirdly, the occurrence of headaches and worries among the happy does not prove response distortion. Life can be a sore trial sometimes but still be satisfying on balance.

The proof of the pudding is in demonstrating the response distortion. Some clinical studies have tried to do so by comparing responses to single direct questions with ratings based on depth interviews and projective tests. The results generally do not differ from responses to single direct questions posed by an anonymous interviewer.

## Reliability

Though single questions on happiness seem to measure what they are supposed to measure, they measure it rather imprecisely. When the same question is asked twice in an interview, responses are not always identical. Correlations are about +.70. Over a period of a week, test-retest reliability drops to circa +.60. Though responses seldom change from "happy" to "unhappy," switches from "very" to "fairly" are rather common. The difference between response options is often ambiguous. The respondent's notion about his/her happiness tends to be global. Thus, the choice for one answer-category or the next is sometimes haphazard.

Because choice is often arbitrary, subtle differences in interrogation can exert a considerable effect. Variations in the place where the interview is held, the characteristics of the interviewer, sequence of questions, and precise wording of the key item can tip the scale to one response or the other. Such effects can occur in different phases of the response process, during consideration of the answer and during the process of communicating the answer.

### Bias in Appraisal

Though most people have an idea of how much they enjoy life, responding to questions on this matter involves more than just bringing up an earlier judgment from memory. For the most part, memory only indicates a range of happiness. Typically, the matter is reassessed in an instant judgment. This reappraisal may be limited to recent change: are there any reasons to be more or less happy than I used to be? But it can also involve quick reevaluation of life: what are my blessings and frustrations? In making such instant judgments, people use various heuristics.

These mental simplifications are attended with specific errors. For instance the "availability" heuristic involves orientation on pieces of information that happen to be readily available. If the interviewer is in a wheelchair, the benefit of good health will be more salient. Respondents in good health will then rate their happiness somewhat higher, and the correlation of happiness ratings with health variables will be more pronounced. Several of these heuristic effects have been demonstrated by Schwarz and Strack (1991).

#### Bias in Response

Once a respondent has formed a private judgment, the next step is to communicate it; at this stage, reports can also be biased in various ways. One source of bias is inherent to semantics; respondents interpret words differently, and some interpretations may be emphasized by earlier questions. For example, questions on happiness are more likely to be interpreted as referring to "contentment" when preceded by questions on success in work, rather than items on mood. Another source of response bias is found in considerations of self-presentation and social desirability. Self-rating of happiness tends to be slightly higher in personal interviews than on anonymous questionnaires; however, direct contact with an interviewer does not always inflate happiness reports. Modest self-presentation is encouraged if the interviewer is in a wheelchair.

Much of these biases are random and balanced out in large samples. So in large samples, random error does not affect the accuracy of happiness averages. Yet it does affect correlations; random error "attenuates" correlations. Random error can be estimated using multiple-trait-multiple-method (MTMM) studies, and correlations can be corrected (disattenuated) on this basis. A first application on satisfaction measures is reported by Saris, Scherpenzeel, and Veenhoven (1996).

Some biases may be systematic, especially bias produced by technique of interrogation and sequence of questions. Bias of this kind does affect the reliability of the distributional data. In principle it does not affect correlations, unless the measure of the correlate is biased in the same way, i.e., correlated error. To some extent, systematic error can also be estimated and corrected. See also Saris et al. (1996).

### Comparability Across Nations

Average happiness differs markedly across nations. Russians currently score 5.4 on a 0–10 scale, while in Canada the average is 7.7. Does this mean that Russians really take less pleasure in life? Several claims to the contrary have been advanced. Elsewhere I have checked these doubts (Veenhoven, 1993). The results of that inquiry are summarized below.

The first objection is that differences in *language* hinder comparison. Words like "happiness" and "satisfaction" will not have the same connotations in different tongues. Questions using such terms will therefore measure slightly different matters. I checked this hypothesis by comparing the rank orders produced by three kinds of questions on life satisfaction: a question about "happiness," a question about "satisfaction with life," and a question that invites respondents to give a rating between "best and worst possible life." The rank orders appeared to be almost identical. I also compared responses on questions on happiness and satisfaction in two bilingual countries and found no evidence for linguistic bias.

A second objection is that responses are differentially distorted by *desirability bias*. In countries where happiness ranks high in value, people will be more inclined to overstate their enjoyment of life. I inspected that claim by checking whether reported happiness is indeed higher in countries where hedonic values are most endorsed. This appeared not to be the case. As a second check, I looked at whether reports of general happiness deviated more from feelings in the past few weeks in these countries, the former measure being more vulnerable to desirability distortion than the latter. This also appeared not to be true.

A third claim is that *response styles* distort answers to questions about happiness dissimilarly in different countries. For instance, a collectivistic orientation in a country will discourage "very" happy responses because modest self-presentation is more appropriate within such a cultural context. I tested this hypothesis by comparing happiness in countries differing in value collectivism, but found no effect in the predicted direction. The hypothesis also failed several other tests.

A related claim is that happiness is typically a *Western concept*. Unfamiliarity with it in non-Western nations would lead to lower scores. If so, we can expect more "don't know" and "no answer" responses in non-Western nations; however, this appears not to be the case.

The issue of *cultural bias* in the measurement of happiness must be distinguished from the question of *cultural influence* on appraisal of the quality of life. Russians can be truly less happy than Canadians but be so because of a gloomier outlook on life, rather than because they have an inferior quality of life.

### Behavioral Observation

Hedonic level of affect can also be assessed using behavioral observation, such as frequency of smiling or body posture. These methods are used when self-reporting is not possible, such as when assessing babies' hedonic level or that of a deeply demented person.

### Archive of Happiness Measures

Methods for assessing happiness are gathered in the collection "Measures of Happiness" of the World Database of Happiness (Veenhoven, 2012a). This collection is limited to measures that fit the definition of happiness given above. Measures are classified by conceptual focus according to the distinction, mentioned above, between overall happiness (coded O), hedonic level of affect (coded A), and contentment (coded C). Additionally classifications include time frame, observation technique, and rating scale.

Each measure has a unique code: for instance, the above-mentioned Affect Balance Scale by Bradburn is coded A-AB-cm-mq-v-2-a (**A**ffect | **A**ffect **B**alance | **c**urrently, last **m**onth | **m**ultiple **q**uestions | **v**erbal response scale | **2** response options | variant **a**). The collection contains a full description of the questions asked or observation schedules used and links to the results obtained using these measures in studies included in the finding collections of the World Database of Happiness.

The comparability of responses to different questions is enhanced in several ways, one of which is the transformation to scale 0–10 of average scores on the basis of weights obtained using the "scale interval study" (Veenhoven, 2009).

### Literature

A detailed overview of the literature is available in the Bibliography of Happiness (Veenhoven, 2012b) section C "Measurement of Happiness."

## Cross-References

- ▶ Affect Balance
- ▶ Happiness
- ▶ International Happiness Scale Interval Study
- ▶ Life Satisfaction

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## Happiness of Algerian Secondary School Students

► Algerian Secondary School Students, Application of the Personal Well-being Index (PWI)

## Happiness of Gifted American College Students

► Gifted American College Students, Application of the Personal Well-being Index (PWI) (Adult Version)

## Happiness of Older People in Italy and Cuba

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### Definition

How do older people represent the concept of happiness? Do older people from different cultures elaborate similar or diverse conceptions of happiness? What are the factors able to influence the levels of happiness and subjective well-being attained in old age? Unfortunately, most of extant research on quality of life in old age focused on the last of these three questions. For example, it has been repeatedly shown that happiness of older adults is positively associated with their physical health status (Michalos, Zumbo, & Humbley, 2000) and the presence of sources of social support in their relational environment (Yeung & Fung, 2007). There is also empirical evidence that the explanatory power of these factors does not significantly vary across cultures (Fagerström et al., 2007; Katz, 2009).

We argue that researchers did not pay sufficient attention to the complex and variable meanings that the concept of happiness may have at both the individual and the cultural level. Indeed, all the studies used self-report questionnaires in which happiness was presented as a concept so obvious that it was not necessary to define it. Researchers using this approach implicitly assume that all persons share a common idea of happiness. However, this assumption could be wrong since the subjective meanings associated to the happiness concept may vary across cultures (Wierzbicka, 2004) and even from a person to another. In order to increase the ecological validity of happiness studies, new research avenues should be pursued. Specifically, we believe it would be important first to investigate the naïve conceptions of happiness across different cultural contexts and social groups and then to develop empirical indicators of happiness entailing these conceptions.

We followed this empirical strategy in a questionnaire study involving older people from Italy and Cuba (Sotgiu, Galati, Manzano, & Rognoni, 2011). These countries were chosen since they present well-differentiated structural characteristics which could influence happiness in old age. From a cultural standpoint, Italian and Cuban societies assign a different role to the individual and to the group within their respective cultures: Specifically, Italy is a country with an individualistic orientation, whereas Cuba is characterized by a collectivistic orientation. From an economic point of view, Italy is an industrialized country with a capitalist-type market economy; Cuba, on the other hand, follows an economical politics linked to the socialist model. Furthermore, Italy and Cuba significantly differ in terms of their levels of economical development: According to recent statistics, the ratio between the gross domestic product per capita in Italy and in Cuba is around 7–1 (World Bank, 2012).

In the following, we describe the specific goals and hypotheses which guided our study (Sotgiu et al., 2011), the research methods we employed, and its main findings. Finally, some general conclusions derived from this study are presented.

## Description

### Goals and Hypotheses

The study had four goals: (1) to identify the components which characterize the naïve conceptions of happiness of the Italian and Cuban groups of older people under investigation and compare their subjective salience, (2) to assess the degree to which participants believed they had attained the different happiness components in their own lives, (3) to estimate and compare the overall level of happiness attained in the two countries, and (4) to identify the main social, cultural, and psychological factors which can influence overall happiness, paying special attention to the participants' involvement in social and cultural activities. The main hypothesis was that the cultural context might influence both the internal organization of the naive conceptions of happiness (i.e., the frequency and perceived importance of happiness components in the two samples) and the degree of attainment of these conceptions in the life of participants.

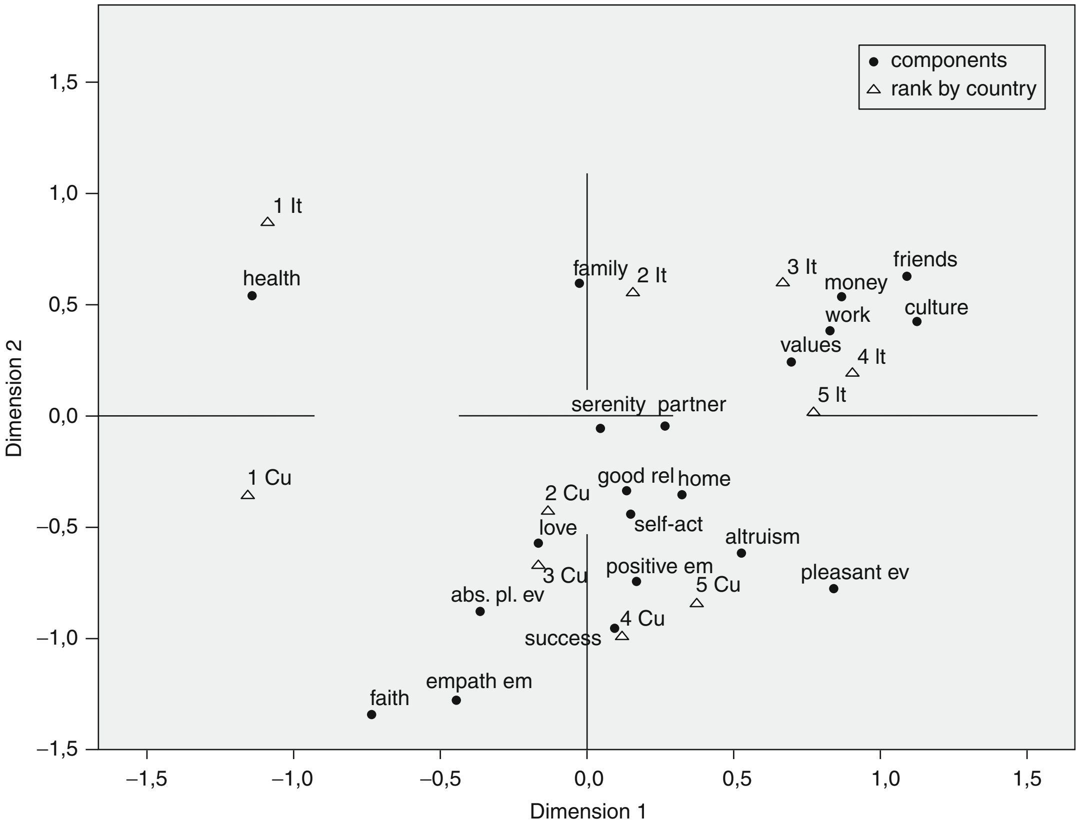
## Method

*Participants*. The total sample consisted of 395 participants: 209 lived in Italy (age 60–91 years) and 186 lived in Cuba (age 60–97 years). To analyze the effect of involvement in social and cultural activities on happiness attainment, the samples of both countries were stratified in three groups: The first group included people who habitually go to social centers for older adults or carry out voluntary activities in public and private organizations (*socialized participants*); the second group included participants involved in cultural activities, such as University Programs for Older Adults (*participants involved in cultural activities*); finally, the third group contained older adults who do not take part in any social or cultural activity (*not socialized participants*). Statistical comparisons between the Italian and Cuban samples confirmed that they were similar with respect to age, gender, educational level, and participants' involvement in social and cultural activities.

*Questionnaire*. The questionnaire employed in the present study was a modified version of the questionnaire used by Galati, Manzano, and Sotgiu (2006) in a previous cross-cultural investigation of happiness in Italy and Cuba which was conducted on younger participants. The questionnaire had three sections. In the first section, participants were asked to think of happiness and to write down at least five things that made them feel happy (*happiness components*). They were asked to report the happiness components in order of importance. To measure the level of attainment of happiness components, respondents were then asked to evaluate on a five-point scale to what extent they had attained them in their lives (0 = *not at all*, 1 = *a little*, 2 = *moderately*, 3 = *quite a lot*, 4 = *totally*). This item was designed taking as reference the Multiple Discrepancies Theory (MDT, Michalos, 1985). The second section of the questionnaire aimed at investigating the participants' transition into old age and their adjustment to this phase of life. More in detail, four closed-ended questions asked participants to judge whether they considered themselves as useful persons (*yes*/*no*), with responsibilities (*yes*/*no*), active (*yes*/*no*), and as having aspirations (*yes*/*no*). Lastly, the third section assessed the participants' sociodemographic characteristics (nationality, age, marital status, education, and religious beliefs).

### Findings

*Frequency and Importance of Happiness Components*. Based on the content analysis of free responses given in the first section of the questionnaire, 20 cross-culturally shared categories of happiness components were identified: Seven of



**Happiness of Older People in Italy and Cuba, Fig. 1** Correspondence analysis map of frequency of citation and rank of importance of happiness components. *Note*: The symbols *n It* and *n Cu* indicate the rank of happiness components given by Italian and Cuban participants, respectively (from 1 to 5) (Source: Sotgiu et al. 2011)

them referred to individual interests (*health, money, home*, *work, success, self-actualization, culture/knowledge*); five components referred to the emotional dimension of life (*pleasant events, absence of unpleasant events, positive emotions, empathic emotions, serenity/well-being*); further five components concerned the relationships with other persons (*family*, *friendship*, *partner*, *love, good affective relationships*); finally, the last three components referred to moral- and value-related aspects (*values*, *faith*, *altruism*). The components most frequently cited by the Italian participants were *health* (reported by 89 % of the sample), *family* (62 %), and *money* (54 %). On the other hand, the components most frequently reported by the Cuban participants were *health* (76 %), *love* (37 %), and *faith* (37 %). Other components cited by more than 30 % of participants were *friendship*, *good affective relationships*, and *serenity/well-being* in Italy, and *good affective relationships* and *family* in Cuba. To assess the relationship between the frequency of citation of happiness components and their importance in both cultural groups, a correspondence analysis was computed on a 20 × 10 contingency table, in which the 20 rows are the happiness components and the 10 columns are the ranks given to them (from 1 to 5) by the Italian and the Cuban participants, respectively. The scores in the cells of this table thus refer to the frequency of citation of a specific component in a given order in one culture. Results of this statistical analysis are represented in a bidimensional graph (see Fig. 1) in which reciprocal distance between happiness components and their ranks varies according to their association in the two cultural groups. As can be seen in Fig. 1, *health* occupies a quite isolated position close to the first rank given by both the Italian and Cuban participants: Thus, it can be considered the most relevant component for the two cultural groups. However, some cross-cultural differences emerge when examining the position of the other happiness components. Specifically, in the upper-right quadrant of the graph, there is a cluster of components which were deemed important and frequently cited by the Italians. This cluster mainly includes components referring to the sphere of individual's interests (e.g., *family*, *money*, *work*, and *values*). On the other hand, between the lower-left and right-hand quadrants, there is another cluster of components which were deemed important and frequently cited by the Cuban participants. The most part of these components refer to the emotional and social dimensions of life (e.g., *love*, *good affective relationships*, *absence of unpleasant events*, *positive emotions*). Lastly, the components placed closer to the graph origin do not contribute to the characterization of the two cultural groups.

*The Attainment of Happiness Components.* Focusing only on the happiness components cited by at least 30 % of one of the two samples, those attained most were *family* and *good affective relationships* in the Italian group, and *faith* and *good affective relationships* in the Cuban group. Statistical comparisons between the two samples revealed that the Italians reported higher attainment scores for the *family*, *health*, and *money* components. Cubans, on the other hand, scored higher in *altruism*, *self-actualization*, and *values*.

*Measuring and Predicting Overall Happiness.* To obtain an overall indicator of happiness, the attainment scores given by participants to each happiness component were averaged. The level of overall happiness, computed as indicated, did not significantly differ between the Italian ($M = 2.81$, $SD = .62$) and Cuban group ($M = 2.80$, $SD = .66$). However, results of analysis of variance revealed that overall happiness varied as a function of the participants' involvement in social and cultural activities: Specifically, participants involved in cultural activities ($M = 2.95$, $SD = .62$) were significantly happier than non-socialized participants ($M = 2.61$, $SD = .84$), whereas only a marginally significant difference was found between participants involved in cultural activities and socialized participants ($M = 2.79$, $SD = .48$). In order to identify the predictors of overall happiness, a linear regression model (stepwise method) was computed, including as independent variables the country, the participants' involvement in social and cultural activities, the subjective perceptions of their adaptation to old age (self-perceived responsibility, usefulness, aspirations, and activeness), as well as their sociodemographic characteristics (age, gender, education, marital status, and religious beliefs). Results showed that overall happiness was positively associated with education, being married, and self-perceived usefulness.

## Conclusions

Our results provide some answers to all the three questions which have been formulated at the beginning of this contribution. We found that older people from both cultural groups considered the health as a core element of their happiness concept. This could be related to the high subjective and objective salience that physical illness and functional impairment obtain in the last stages of human life (Smith, Borchelt, Maier, & Jopp, 2002). In accordance with our hypotheses, we also found some cross-cultural differences in the frequency of citation and perceived importance of some happiness components. Overall, Italians' conceptions of happiness focused on the individual's interests and needs, and this is coherent with the individualistic cultural orientation of the Italian society. Cubans, on the other hand, attributed more importance to the communication and social relations, which is consistent with their collectivistic culture. Interestingly, one of the most salient happiness components for Cubans was *faith*. This could be a surprising finding for a socialist and secularized culture that refused for a long time the Christian religion. However, we note that Cuban participants referred to the wide range of beliefs in superior spiritual entities that give sense to Nature and human life. Importantly, these entities do not necessarily coincide with the Christian God. Instead, they seem mainly linked to animistic beliefs and rituals, which are so diffused in Cuba. Always in accordance with our hypotheses, we found some cross-cultural differences in the attainment of some specific happiness components (e.g., *money*, *altruism*). However, the overall levels of happiness attained by Italians and Cubans were almost identical. This suggests that culture may have a limited power in predicting overall happiness attainment. Moreover, high levels of economic wealth, such as those found in Italy, do not seem to guarantee higher levels of happiness and subjective well-being (cf. Csikszentmihalyi, 1999). Finally, it has been found that overall happiness of participants from both countries was positively associated with education, being married, involvement in social and cultural activities, and self-perceived usefulness. These results indicate that both personal and social resources are important factors able to enhance the quality of life in old age.

## Cross-References

- ▶ Aspiration Theory
- ▶ Gross Domestic Product (GDP) and Happiness
- ▶ Happiness
- ▶ Multiple Discrepancies Theory
- ▶ Quality of Life
- ▶ Subjective Well-being
- ▶ Value Theories

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# Happiness Population Distribution Parameter Estimates

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## Definition

The distribution of happiness in a population is characterized by its parameters. The most important two are the mean value and the standard deviation, characterizing the general level and the dispersion within the distribution, respectively. These statistics are estimated from the measurement of happiness results gathered in a sample from the population under study. This lemma describes how the information on the happiness distribution in the sample is converted into estimates of the mean and the standard deviation of the happiness distribution in the target population.

## Description

### Background

Quality of life (QoL) is often measured using survey questions, such as on “happiness,” which is used as an example in this lemma. Questions are answered by ticking one of a set of response options. This may be a verbal response option, e.g., “fairly happy,” or a numeral one, such as a digit “8.” All these scales are discrete rating scales at the ordinal level of measurement.

Happiness in the population is unlikely to be discretely distributed, and a continuous distribution model seems to be more obvious. The consequence of this is that statistics of the discrete sample distributions cannot be simply generalized to characterize the population happiness distribution.

### Principle of the Continuum Approach

The basic principle of the continuum approach is the recognition that happiness as measured in a sample and happiness in the population are two variables with fundamentally different distribution properties. Whereas the former is observable by definition and has a discrete polytomous distribution, the population happiness variable is postulated to have a continuous distribution on a two-sided bounded interval as its domain. This population happiness variable is unobservable or *latent*. The postulated properties of the latent happiness variable are described in the lemma ▶ latent happiness variable.

Happiness described in this way is the variable in which QoL investigators are interested and its parameters or other characteristics are (need to be) applied in correlational studies of happiness. The continuum approach provides the estimates of these characteristics on a continuum, e.g., 0 to 10. More precisely, it is a method to convert the sample observations of happiness, as it is measured, using a discrete ordinal scale of measurement, into estimates of the parameters of the happiness distribution in the population represented by this sample.

The justification of this approach is the underlying assumption that, when happiness is measured using different scales in different languages, the results can be converted into estimated characteristics of population distributions that are equal, at least approximately, in this way providing a more valid basis for correlational happiness studies.

### Empirical Partition of the Happiness Continuum

If happiness is measured using a four-step verbal scale, the continuum [0, 10] of the latent happiness variable is partitioned into four contiguous subintervals, each of which corresponds to one of the response options of the measured happiness. A common series of verbal response options is {“very happy,” “pretty happy,” “not too happy,” “very unhappy”}. These four options do not neatly fit quartiles on the [0, 10] continuum; hence, a first step is to estimate where the boundaries are. This is done using “judges” as described in the lemma ▶ International Happiness Scale Interval Study (Kalmijn, Arends, & Veenhoven, 2011). Each of these judges is asked to estimate the positions of three boundaries on the [0, 10] continuum, e.g., 6.3 as the dividing point between “not too happy” and “pretty happy.” They do so in the context of a particular series of response options in a particular language. The average values of each boundary position form the basis for the conversion procedure, as mentioned above.

### The Conversion Procedure

The conversion of the sample measurement data into the estimated characteristics of the corresponding population happiness distribution is the joint result of four different contributions, which are summarized in Table 1.

Two alternative models have been developed for the choice in the fourth contribution: a semicontinuous model and a fully continuous one (Kalmijn, 2010), pp. 129–133).

The domain of the latent happiness variable, usually [0, 10], in the *semicontinuous model* is partitioned into $k$ intervals, $k$ being the number of response options. A uniform distribution of the latent happiness variable is postulated to exist between each pair of successive interval boundaries. The probability density function is not continuous; it is a step function with a step at each boundary value of the latent variable. The estimation procedure of the mean value and of the standard deviation of this distribution is described in Kalmijn (2010, pp. 204–210). It has been proven (Kalmijn, 2010, p. 206) that the unbiased estimated mean happiness value of this model is equal to the estimated mean value as it is obtained by the rescaling of the observational data on the basis of the mid-interval values according to Veenhoven (see lemmata ► Rescaling and ► International Happiness Scale Interval study).

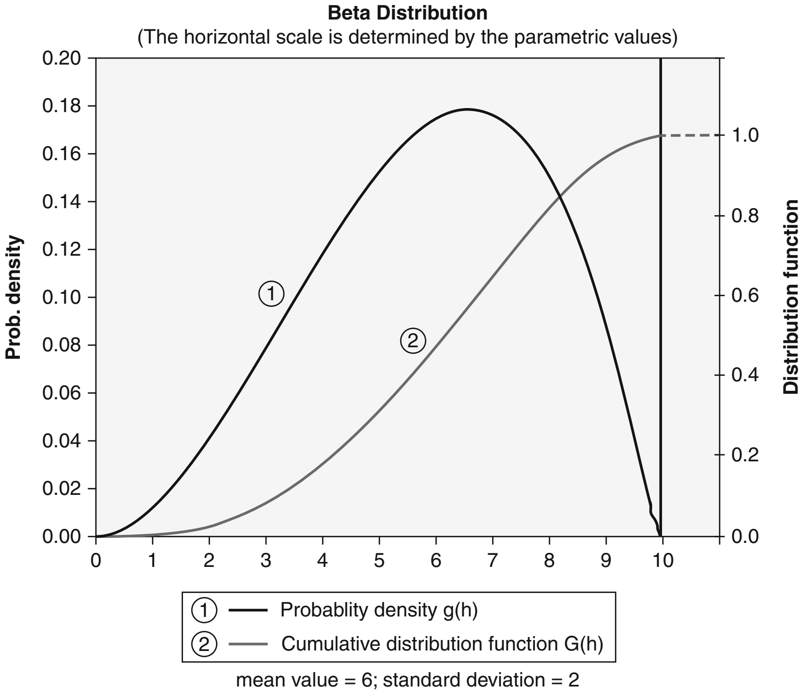
**Happiness Population Distribution Parameter Estimates, Table 1** Contributions to the conversion of discrete scale results into population distribution parameter estimates

| *Contribution* | *Contributor(s)* |
|---|---|
| 1. Choice of "happiness measure" (leading question + response options) | Survey conductor |
| 2. Individual happiness frequency distribution (application phase) | Respondents |
| 3. Estimation of boundary positions (calibration/construction phase) | Judges |
| 4. Choice of the distribution model of the latent population happiness variable | Methodologist |

The distribution of the latent happiness in the *fully continuous model* is postulated to be the beta distribution with [0, 10] as its domain. The beta distribution is a two-side bounded distribution with two positive parameters, usually denoted $\alpha$ and $\beta$, covering a wide class of distributions. For $\alpha > 1$ and $\beta > 1$, the density is unimodal and equals zero at both domain boundaries. The distribution and its relevant properties have been described in Kalmijn (2010, pp. 221–225). As an example, Fig. 1 is the diagram of a beta distribution on the [0, 10] domain with mean value = 6 and standard deviation = 2. The parameters of this distribution are $\alpha = 3$ and $\beta = 2$, respectively.

A description of the parameter estimation procedure on the basis of this beta distribution model is given in Kalmijn (2010, pp. 160–162).

In the WDH, the choice with respect to the fourth above contribution is made in favor of the fully continuous model, being the more valid one.



**Happiness Population Distribution Parameter Estimates, Fig. 1** Probability density function $g(h)$ and cumulative distribution function $G(h)$ of a beta distribution on the [0, 10] happiness domain with parameters $\alpha = 3$ and $\beta = 2$ respectively

### Application to Numerical Scales

Happiness is measured increasingly by using numerical 10-step or 11-step scales. The origin of the 10-step scale is an ordinal scale with code numbers {1, 2,... 9, 10}, which are easily interpreted as if they are cardinal numbers. The 11-step scale is an extension of the 10-step scale at the lower end, resulting in {0, 1, 2,..., 9, 10} as 11 scale points. Numerical scales with other numbers of steps are also applied, albeit less frequently.

Although the continuum approach was developed originally to solve problems inherent to the use of verbal scales, its principles are also applicable to numerical scales. In the latter case, the positions of the boundaries between the subintervals are not determined empirically, but are postulated to be based on the assumption that all subintervals have equal widths $10/k$ on a [0, 10] continuum if a $k$-step discrete scale has been presented to the respondents. This assumption seems to be acceptable if $k$ is not too small, say for $k = 7$ or more.

A major advantage is that the boundaries obtained in this way are free of random errors, which gives rise to a substantially increased precision of the characteristic statistics to be used in subsequent happiness studies.

Each of the $k$ ratings of the discrete scale of measurement is considered to be the mapping of the mid-interval value of the corresponding subinterval of the continuous population happiness distribution.

If the primary scale is a discrete $\{1, 2,..., k\}$ scale and the sample average value $m$ and standard deviation $s$ are calculated on the conventional way, then $(10/k)(m - ½)$ is the unbiased estimator of the mean value $\mu$ of the corresponding continuous happiness distribution in the population. The unbiased estimator of the variance $\sigma^2$ of this distribution equals $(10/k)^2(s^2 + 1/12)$.

If the primary scale is a discrete {0, 1, 2,..., 10} 11-step numerical scale, then these estimators are $(10/11)(m + ½)$ and also $(10/11)^2(s^2 + 1/12)$, respectively.

*Note* the algebraic sign of "+½" in this particular case, due to the fact that "0" and not "1" indicates the lowest possible happiness level of this primary rating scale.

This conversion enables one to compare results obtained using verbal scales to those from numerical scales with the same leading question. The proofs of the above formulae are given by Kalmijn (2013) for the specific case of a {1, 2,..., 10} rating scale and in (Kalmijn, 2012) for the $k$-step numerical scales in general.

## Cross-References

- ▶ International Happiness Scale Interval Study
- ▶ Latent Happiness Variable
- ▶ Rescaling

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# Happiness Scales

- ▶ Happiness Measures

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# Happiness Set Point

- ▶ Happiness Levels Stability

## Happiness, Subjective

► Subjective Happiness Scale

## Happy Life Expectancy

► Quality-Adjusted Life Expectancy

## Happy Life Expectancy (HLE)

► Happiness Adjusted Life Years

## Happy Life Inventory

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### Synonyms

Composite measure of happiness

### Definition

► Happiness is the inner experience of well-being that makes life worthwhile. More than "positive thinking," happiness is what Csikszentmihalyi (1996) describes as being in a state of "► flow" – that state where a person is so deeply absorbed in an activity that he/she loses counting of time. This state of concentration is undivided, unself-consciousness, and deeply enriching, bringing great happiness to the person.

### Description

Measuring "happiness" may seem like common sense, but it in fact took scholars several generations to make a transition from a psychology of malaise and illnesses to one focused on human flourishing. Through the leadership and copious writings of Ed Diener, not forgetting such distinguished scholars as Martin Seligman and Mihaly Csikszentmihalyi, the measurement of mental states now includes a more systematic measuring of positive traits such as general ► life satisfaction (Diener, 1994), creativity (Csikszentmihalyi, 1996), and ► subjective well-being (Larsen & Eid, 2008).

Within the framework of such a ► positive psychology, "treatment is not just fixing what is broken; it is nurturing what is best. . . psychology is not just a branch of medicine concerned with illness or health; it is much larger. . . it is about work, education, insight, love, growth and play" (Seligman & Csikszentmihalyi, 2000, p. 7). Seen from this perspective, measuring a happy life is not about accounting for the absence of "depression" (itself a common measure of mental "health" ironically) but measuring the presence of attributes of a decisively positive nature.

Scholars have relied on both specific and general measures of happiness. Specific measures include those that tap the balance between positive and negative affect in a person's life over time (Diener, 1984). Other specific measures incorporate affective experiences in multiple domains of life such as family, work, and ► leisure (Tambyah, Tan, & Kau, 2009). In contrast, general measures of happiness focus on a broad cognitive judgment about one's life as a whole (Diener, 2000). Most instruments, however, attempt to be comprehensive, measuring subjective well-being ("SWB" in short) in terms of three components: life satisfaction, the presence of positive affect, and the absence of negative affect (Kim, Kim, Cha, & Lim, 2006).

The hunt for elegant and parsimonious measures of happiness is an ongoing exercise. A well-known measure is Fordyce's (1998). This instrument asks respondents to estimate the percentage of time they feel happy, likewise for neutral and for unhappy, over a given period of time. Studies show that this broad measure correlates highly with a wide variety of criterion measures of subjective well-being, an indication of its validity and effectiveness as an instrument (Larsen & Eid, 2008).

Does that make specific measures of subjective well-being redundant? Not necessarily. Diener's work underscores the importance of using a multi-method assessment tool rather than a singular instrument (Diener, 1984). The rationale being that the things that make one person happy may not necessarily make another person happy. Second, there may be cultural differences in the sources of happiness, for instance, studies show that whereas people from western cultures tend to think of happiness in terms of the mastery of self and personal gratification, people from eastern cultures are inclined to perceive happiness in terms of preserving collective harmony in the context of family and friends (Diener, 1996; Kim et al., 2006).

To be sure, there is also the argument that subjective well-being is the predominant outcome of genes (or DNA) and that people behave according to their inborn traits of either extraversion or neuroticism (Lykken, 1999; Diener & Seligman, 2002). However, numerous studies have shown that social contexts and conditions matter as well (Diener, 2000; Kim et al., 2006; Larsen & Eid, 2008). Notions of happiness are not purely psychological phenomena; sociology too has much to say about who is happy and how. Cultural differences and values are an important set of predictors, but so are institutional elements. For instance, some nations are better able to provide their citizens a good ▶ quality of life: access to food, shelter, clean water, health, opportunities, and ▶ freedom, while others subject their citizens to poverty, inequality, and tyranny. Studies have shown that life satisfaction tends to be lower in Eastern European nations, including Russia, and (is) higher in Latin America, controlling for income. In the case of Eastern Europe, one could postulate that the political structure, in transition after the end of the Cold War, is itself a major determinant of the low life satisfaction scores (Diener & Suh, 2000). Clearly, at this point in time, more work needs to be done to examine the interplay between specific aspects of social structure and of how they interface with subjective well-being, even as there remains an abiding need for cross-national indices of well-being (Diener, 2000).

At the same time, as ▶ democracy and post-materialist values become increasingly important elements with the rise of middle classes across nations, measures of well-being will need to, in Diener and Seligman's (2004) words, go "beyond money," to consider other measures of subjective well-being. These other measures would touch upon pleasant effect, life satisfaction, fulfillment, and quality of life (as opposed to a stress-ridden life, which is often the price paid by affluent nations, such as Japan and, to some extent, Singapore; see Diener, 2000).

Nevertheless, material wealth continues to be an important ingredient of a happy life, but in a post-materialist world, additional indicators which measure flourishing constitute the current preoccupation of scholars in the field of positive psychology. The implication for policy-makers is likewise obvious. Governance will have to redefine the "good life" beyond material wealth, to include a citizenry's demand for ▶ work-life balance and positive feelings. The "▶ Eurobarometer" is one such suitable set of surveys used by the European nations, a model which the United States is consulting (Diener, 2000).

It is conceivable that states, especially developmental states, may be wary of a preoccupation with "happiness" as this might displace, in populations, a conscientious work ethic in favor of fun. But research puts such fears and concerns to rest. The novel contribution of a positive psychology is, quite simply, that happy workers do produce better work. The determined pursuit of happiness is in fact a necessary action for uplifting and adding to, rather than the negation of, national performance. The shift to a more comprehensive measure of subjective well-being "beyond money" is a pivotal ingredient for making more money, if that is what developmental states interpret to be "happiness." Ultimately, a positive psychology embedded in appropriate sociological conditions will give rise to happy lives and thereby happy societies, with quality economic performance as a by-product, or perhaps the latter is not even an important consideration, as in Bhutan, the land of gross national happiness. But this is not the end of the discourse; some might argue that while happiness is worth pursuing, it hinges too much on fleeting circumstances and that the positive feeling of greater permanence is joy.

## Cross-References

- ▶ Affective Component of Happiness
- ▶ Cheerfulness
- ▶ Emotional Well-Being
- ▶ Happiness Measures
- ▶ Optimism
- ▶ Personal Well-Being

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# Happy Life Years (HLY)

- ▶ Happiness Adjusted Life Years
- ▶ Quality-Adjusted Life Expectancy

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# Happy Planet Index

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## Synonyms

HPI; (un)Happy Planet Index

## Definition

The Happy Planet Index (HPI) is a measure of *sustainable* well-being or the ecological efficiency with which good lives are achieved. It is the ratio between mean happy life years in a country or region and per capita ▶ ecological footprint, with a statistical adjustment to roughly equivalize the coefficients of variation for the two halves and to produce values ranging between 0 and 100. As well as a value for the HPI, a color-coding scheme also exists.

## Description

### Introduction

The ▶ HPI was introduced in a report published in 2006 by the London-based think-tank **nef** (the new economics foundation) (Marks et al., 2006). The report used preexisting data on three variables (life satisfaction, life expectancy, and ▶ ecological footprint) from 2003 or the nearest available year, to produce HPI scores for all 177 countries listed by the UN (United Nations), plus Taiwan. Life satisfaction was derived from many sources, including the World Values Survey and the Latinobarometer. The main question used was:

> All things considered, how satisfied are you with your life as a whole these days?

Respondents answered on a scale from 0 to 10.

For some countries, however, data was not available, and mean life satisfaction was estimated using regression methodologies presented in a paper by Abdallah, Thompson, and Marks (2008).

HPI scores were calculated using the following formula:

$$HPI = \frac{HLY}{Footprint + \alpha} \times \beta$$

$\alpha$ was determined to match the coefficients of variation for the numerator and denominator to ensure that variations in footprint did not dominate the calculation. $\beta$ was determined so that scores ranged between 0 and 100.

As well as a score, a six-color traffic-light system was developed, combining data from the three variables, to deal with the challenge of substitutability – to achieve an overall green, a country needs to perform well on all three variables.

An update was published in 2009 with data from 2005 (Abdallah et al., 2009). Life expectancy and ecological footprint sources were the same. However, for life satisfaction, **nef** took advantage of recently available data from the Gallup World Poll. For many countries, data using the same question as in the earlier HPI report was available. However, for others, data was only available using the Cantril Ladder of Life Scale. **Nef** used a regression formula to attempt to convert Ladder of Life Scale scores to the more common life satisfaction question. For other countries still, **nef** used data from the World Values Survey. **Nef** did not estimate data for any countries for which life satisfaction data was not readily available.

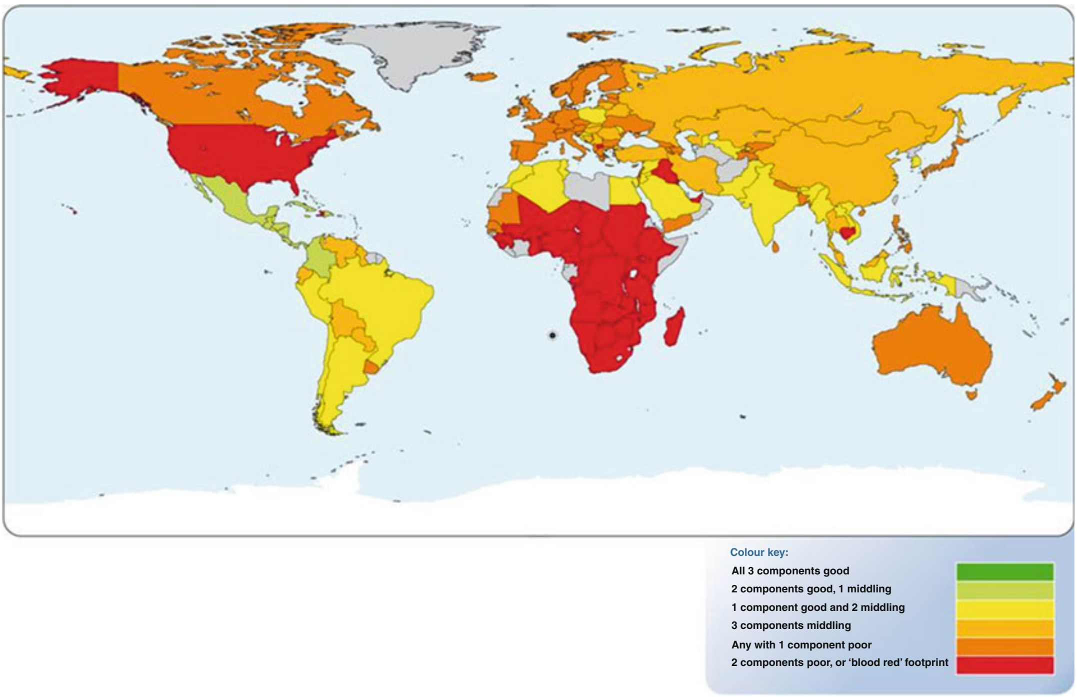
A European HPI was published in 2007, combining life satisfaction data from several sources and using only the carbon-related component of the ecological footprint (Thompson et al., 2007). An online tool is also available for individuals to calculate their own HPI. Since the completion of this encyclopedia entry, a third global HPI report has been published (Abdallah et al., 2012). Given data availability, this third report uses the Laffer of Life Scale for subjective well-being, and not the earlier life satisfaction question. Other changes include the development of an inequality-adjusted HPI.

## Conceptual Basis

The HPI can be seen as a measure of ▶ sustainable development, following the Brundtland definition – *Meets the needs of the present without compromising the ability of future generations to meet their own needs*. In 2006, the IUCN (International Union for Conservation of Nature) called for a measure of “the production of human well-being . . . per unit of extraction from or imposition upon the nature.” The philosophy behind the HPI is to attempt to produce a simple measure which focuses on a few key measures. Experienced well-being (proxied using life satisfaction) and health (proxied using life expectancy) can both be seen as ends in themselves – they are ultimate objectives. The ecological footprint is a proxy for impact on environment. Other social indicators (e.g., median income, unemployment rate, and crime rate) are all important, but they generally measure things which are important *because* of their impact on well-being. If one is able to measure subjective well-being and health well, then one can assume that their impact is captured in the HPI.

## Results

The HPI produces unconventional results (see Fig. 1 and Table 1). Very poor countries, such as those in sub-Saharan Africa, perform poorly, but so do wealthy countries, particularly



**Happy Planet Index, Fig. 1** Map of the world color-coded by HPI

**Happy Planet Index, Table 1** Selected countries and their HPI scores

| HPI rank | Countries | Life Sat | Life Exp | EF | | HPI |
|---|---|---|---|---|---|---|
| 1 | Costa Rica | 8.5 | 78.5 | 2.3 | = | 76.1 |
| 2 | Dominican Rep | 7.6 | 71.5 | 1.5 | = | 71.8 |
| 3 | Jamaica | 6.7 | 72.2 | 1.1 | = | 70.1 |
| 9 | Brazil | 7.6 | 71.7 | 2.4 | = | 61.0 |
| 20 | China | 6.7 | 72.5 | 2.1 | = | 57.1 |
| 35 | India | 5.5 | 63.7 | 0.9 | = | 53.0 |
| 43 | Netherlands | 7.7 | 79.2 | 4.4 | = | 50.6 |
| 74 | UK | 7.4 | 79.0 | 5.3 | = | 43.3 |
| 114 | USA | 7.9 | 77.9 | 9.4 | = | 30.7 |
| 143 | Zimbabwe | 2.8 | 40.9 | 1.1 | = | 16.6 |

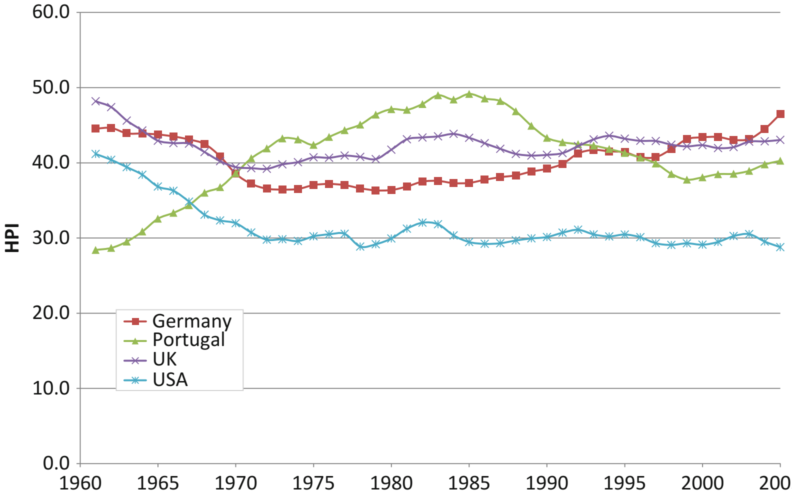
the USA (United States of America). In the case of the USA, this is a result of a particularly high ecological footprint. Meanwhile, the countries that do well are generally middle-income countries, particularly in Latin America, with quite high levels of health and experienced well-being, but much lower ecological footprints. In 2009, top place was held by Costa Rica, followed by the Dominican Republic. However, no country achieves high performance in all three variables.

In the HPI 2.0 report, **nef** also published data on change in HPI over time for OECD countries (Organisation for Economic Cooperation and Development). Figure 2 shows the results for four countries. While the HPI for the USA fell from over 40 in 1960 to around 30 in 1970, that for Portugal increased from below 30 in 1960 to almost 50 in the 1980s. Germany's HPI has increased gradually from the 1980s to 2005.

## Impact and Discussion

At the time of writing, since the launch of the HPI 2.0, the HPI website had been visited by over half a million individuals from 221 countries. It has achieved substantial media impact with over 400 articles citing the HPI in English language news.

**Happy Planet Index, Fig. 2** HPI over time for selected OECD countries



It has been cited by various governmental and supra-governmental bodies as a possible measure of progress, including the British Conservative Party, the OECD, and the European Parliament. At the local level, a Welsh local authority, Caerphilly, has developed the Caerphilly Sustainability Index based on the HPI.

Critiques of the HPI have tended to focus on the high performance of developing countries. If the HPI is higher in Mexico than the USA, for example, why do so many people migrate from the former to the latter (see, e.g., this article in the right wing blog Conservative Home)? However, such critiques typically forget that the HPI is intended as a measure of *sustainable* well-being, not just well-being. For example, considering well-being alone, the USA *does* have a higher score in terms of happy life years than Mexico (albeit the difference is smaller than one might expect). It is therefore not surprising that people prefer to live in richer countries. However, the HPI also considers the sustainability of this lifestyle – when this is taken into consideration, the quality of life in Mexico comes at a much cheaper ecological price than that in the USA.

More perceptive are critiques that highlight the high performance of countries with poor human rights records. For example, according to the happy life years metric, quality of life in Saudi Arabia is equivalent to that in Japan and better than that in many European countries such as the Czech Republic or Portugal. In terms of the overall HPI, Burma ranks higher than all Western European nations. Even accounting for its small footprint, is this really justified?

This can indeed be considered to be a shortcoming of the HPI or indeed any metric which focuses on means. In many cases, authoritarian regimes tend to exact costs in terms of human well-being in a minority and often a minority that is unlikely to appear in surveys. The overall effect on *mean* well-being is therefore likely to be small. Furthermore, the effects of national policies on people living in other countries are not taken into account. Moral issues such as justice will only appear in the HPI metric to the extent that they influence average life satisfaction and life expectancy.

Another issue that has been raised is the precise operationalization of the numerator and denominator. Ecological footprint does not capture all aspects of environmental impact, nor does life satisfaction capture all off experienced well-being, which many well-being experts consider to be multidimensional. In 2009, **nef** also published the ▶ National Accounts of Well-Being, based on over 50 questions on well-being from the European Social Survey.

The questions cover ▶ subjective well-being (both in terms of life satisfaction and affect) but also what has been termed ▶ flourishing or ▶ eudaimonic well-being. Unfortunately, this data is only available for European nations and, to date, for only 1 year.

Meanwhile, in the academic literature (see, e.g., Ng, 2008; Knight & Rosa, 2011), there has been discussion of the adjustment factors employed in the HPI and the treatment of life expectancy and life satisfaction as equally important.

## Cross-References

- ▶ Ecological Footprint
- ▶ Happy Life Expectancy
- ▶ Life Expectancy
- ▶ Life Satisfaction
- ▶ Subjective Well-Being
- ▶ Sustainable Development

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# Happy Spouses and Happy Parents

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## Synonyms

Parent–child relationship quality; Parent–child relationship, quality of; Spousal relationship quality; Spousal relationship, quality of

## Definition

The concepts of the quality of the spousal relationship and the parent–child relationship have been defined in multiple ways. The quality of the spousal relationship has been used to refer, on the one hand, to individuals' subjective experiences of their spousal relationship (using terms such as ▶ satisfaction and happiness) and, on the other hand, to more objectively measureable features of that relationship (e.g., adjustment, communication; Erel & Burman, 1995; Fincham & Beach, 2006; Glenn, 1990). Also, while some studies concerning the quality of the parent–child relationship have focused on parents' general evaluations of that relationship (e.g., satisfaction), others have emphasized aspects such as autonomy support, conflicts, warmness, or within parents' consistency (Clark & Ladd, 2000; Erel & Burman, 1995; Krishnakumar & Buehler, 2000).

## Description

### Happy Parents and Happy Spouses

Individuals' experiences of family relationships are crucial for their well-being. From the parental viewpoint, two family relationships in particular have personal importance: the parent–child relationship, that is, the relationship between child and parent, and the spousal relationship formed by the partners. During recent decades, the relationship between the spousal and the parent–child subsystems has attracted broad research interest. In this chapter, we review theoretical and empirical literature on the relatedness of the quality of the spousal relationship and the quality of parent–child relationships. We discuss the role of gender and also pay attention to methodological questions, with special focus on the issue of variable-centered versus typological approaches.

## What Connections Are There Between Marriage and Parenthood?

In the research and theoretical literature, three hypotheses have been introduced to describe and explain the link between the spousal and parent–child relationships (Erel & Burman, 1995; Krishnakumar & Buehler, 2000). *The spillover hypothesis*, positing a positive association between these family relationships, proposes that emotions and experiences originating in the spousal relationship are transferred to parenthood and vice versa. *The compensatory hypothesis*, in turn, proposes a negative connection between the spousal and parent–child relationship. According to this hypothesis, parents with a non-satisfying or distant spousal relationship may look for love, caring, and intimacy from their children. In turn, highly satisfied spouses may regard the child as interfering with their spousal closeness (Goldberg & Easterbrooks, 1984). To complement these, *the compartmentalization hypothesis* posits that no connection exists between the spousal and parental relationship. Instead, parents compartmentalize their spousal and parental roles. The compartmentalization hypothesis is discussed in the theoretical literature less often than the spillover and compensatory hypotheses (Erel & Burman, 1995; Krishnakumar & Buehler, 2000).

In empirical studies, the spillover hypothesis has obtained the strongest support (for reviews, see Erel & Burman, 1995; Grych, 2002; Krishnakumar & Buehler, 2000), that is to say, living in a satisfying marriage is often connected with well-functioning parenting and parent–child relationships. This finding has been replicated in various family types, different countries, and families with children in varying age groups, using both self-reports and observations as research methods (for reviews, see also Belsky, 1990; Grych, 2002). However, the association between a satisfying marriage and good quality parenthood has usually been only moderate in size. For example, in a study by Malinen et al. (2010), support for the spillover hypothesis was found. Malinen and colleagues used structural equation modeling to examine family relations among Finnish, Dutch and dual earners with young children and showed that satisfaction in the spousal relationship promotes higher quality in the parent–child relationship and lower parental role restrictions. The links between the spousal and the parent–child variables were found to be moderate in strength (unstandardized ► regression coefficients around.30). The robustness of these results was strengthened by the fact that these connections did not vary by gender or country (Finland and the Netherlands).

Less empirical evidence has been reported in support of the other hypotheses (for a review, see Erel & Burman, 1995). Support for the compensation hypothesis was found, for example, in a study by Belsky, Youngblade, Rovine, and Volling (1991). They found that mothers whose love for their partner deteriorated during the first years of parenthood showed more positive and supportive behavior when playing with their child than mothers reporting either no change or an increase in spousal love. The compartmentalization hypothesis, in turn, received support from the longitudinal study by Kurdek (1998), which found no connection between marital and parental satisfaction.

Although the three hypotheses have diverse theoretical origins (e.g., the stress and coping perspective, the social learning theory), the family systems approach supplies grounds for all three hypotheses. The family systems perspective uses the metaphor of an organism or a system to model families (Cox & Paley, 1997; P. Minuchin, 1985). The approach states that the family is a hierarchically organized whole that is composed of smaller subsystems (e.g., parent–child and sibling systems) and connected by a reciprocal relation to larger macrosystems (e.g., working life and culture). Because this approach has its origins in family therapy, the emphasis is on pathological processes and conflicts.

In the systemic literature, spillover relates to *scapegoating* and *detouring*, which refer to processes in which problems that arise in one relationship are projected onto the other relationship (S. Minuchin, 1974). According to the systems approach, connections between family subsystems are circular and reciprocal (Cox & Paley, 1997; P. Minuchin, 1985). The few longitudinal studies addressing this question (Davies, Sturge-Apple, & Cummings, 2004; Floyd, Gilliom, & Costigan, 1998) have found some evidence for the hypothesis that quality in the marital system affects parenting over time, but less support for the view that parenting has longitudinal effects on the spousal relationship.

Compensation, in turn, takes place when family members form *coalitions* in which a member in a conflictual relationship allies with a third family member (Grych, 2002). In the case of a marital problem, a parent–child coalition could result in a close relationship between the parties of the coalition but also in a conflictual relationship between the child and the excluded parent.

Finally, and related to the compartmentalization hypothesis, *boundaries* between the different family subsystems can enable parents to keep the spousal relationship and parenthood apart so that negative feelings and arguments in one relationship do not affect experiences in another relationship (Cox & Paley, 1997).

## Gender and Family Roles

Family life differs in many respects between women and men. In the home, the role of women continues generally to be seen as more central than that of men (Parke, 2002; Perälä-Littunen, 2007). At the same time, the home context often induces more negative feelings in women than in their husbands (Koh, 2005). One reason for this may be that women spend considerably more time on unpaid domestic work than men (Eurostat, 2008). Probably related to these gender differences, women have been found to experience lower quality in both the spousal and parental relationships than men (e.g., Amato, Johnson, Booth, & Rogers, 2003; Aunola, Nurmi, Onatsu-Arvilommi, & Pulkkinen, 1999; Malinen, Rönkä, & Tolvanen, 2012). More specifically, Malinen et al. (2012) showed that although women's and men's judgments about the positive sides of their spousal relationship are equally positive, women see more negative sides in their spousal relationship compared to men.

With respect to gender differences in the connection between parental and marital quality, there is evidence that women and men differ in the linkage between the spousal and the parent–child relationships, the connection being more strongly positive for men (Krishnakumar & Buehler, 2000; Shek, 2000). Many explanations have been offered for this (Parke, 2002). For example, ▶ fatherhood may be more susceptible to external influences because of its less strongly socially scripted nature. Compared to mothers, fathers' level of participation is still more a matter of choice. Men may also benefit more from spousal support because they have fewer opportunities to acquire and practice parenting skills. In their meta-analysis, however, Erel and Burman (1995) found no gender differences in the linkage between the spousal and the parent–child relationships.

## Typological View in Studying Family Roles

As described above, while the majority of empirical studies suggest that a positive association exists between experiences in the spousal relationship and parenthood, the connection is only moderate in size. This means that families vary in how their experiences in these family relationships are connected to each other. From the theoretical point of view, the systems approach also suggests that different processes take place in different families (Cox & Paley, 1997). However, most studies analyzing the association between the spousal and the parent–child relationship have relied on the *variable-oriented approach* (Bergman & Magnusson, 1997). This approach assumes that the characteristics of families can be reduced to a set of variables and searches for linear covariation between those variables. Thus, this approach neglects unique family processes. In contrast to this, the *family typological approach* (see also person-oriented or pattern-oriented approach; Bergman & Magnusson, 1997) acknowledges that, owing to the existence of subgroups of families, the relationship between the variables can be nonlinear. Thus, the focus is on differences between families.

The typological approach can be seen in the work of S. Minuchin (1974), who, building on the systems approach and his experiences as a therapist, identified patterns of family functioning in his structural family systems theory. Cohesive families comprise emotionally involved members, whereas in separate families, the members remain distant from one another. In detouring families, parents transfer their arguments to the parent–child relationship, using a child as a scapegoat, and in triangulating families, one parent forms a coalition with a child against the other parent.

The few studies applying the typological approach to the simultaneous study of spousal and parent–child subsystems have shown that families differ in how family roles are combined (Belsky & Fearon, 2004; Johnson, 2003; Malinen et al., 2010). Taking S. Minuchin's theory (1974) as his framework and using observational data, Johnson identified "cohesive families," "father-child alliances," and "mother-child alliances" among families with kindergarten-age children. When the same families were observed 5 years later, the categories "cohesive," "separate," and "triangulated families" were identified. Within families, the family types showed little consistency from early to middle childhood. Belsky and Fearon, in turn, found five family types in a study on families with young children. Family functioning in three of these family types – "consistently supportive," "consistently moderate," and "consistently risky families" – was in congruence with the spillover hypothesis, that is, functioning in one relationship was similar to that in another relationship, whereas two types – "good marriage/poor parenting" and "poor marriage/good parenting" – showed contrasting patterns of marital and parent–child quality. The family types were found to differ both in contextual antecedents and children's well-being. For example, the comparisons of the two "inconsistent family types" (i.e., families characterized by good marriage/poor parenting and poor marriage/good parenting) suggested that if only one family subsystem can be strong, it is better for children's well-being that it is the parent–child rather than spousal subsystem.

In a study by Malinen et al. (2010) on Finnish and Dutch dual earners with young children, four family types were identified. In the largest group of families – "families with satisfying family relationships" – satisfying spousal relationships were accompanied by high-quality parent–child relationships. Families where these experiences were incongruent were also found. This incongruity was either between the two life spheres ("families with unsatisfying parent–child relationships") or between spouses ("families with dissatisfied women" and "dissatisfied men"). All four family types were found among both the Finnish and Dutch samples; however, families with dissatisfied women were more prevalent in Finland. The findings also suggested that different family types may be related to different family stages. For example, families with satisfying relationships – when contrasted with families with dissatisfying parent–child relationships and families with dissatisfied men – had more recently experienced the birth of a child. The particular strength of the study by Malinen et al. was in the use of mixture analysis which, in contrast to traditional ▶ cluster analysis, permits the use of statistical criteria for deciding the number of family clusters.

The family situation most frequently mentioned in the research and family systems literature on differing experiences of family roles is one where a conflictual spousal relationship is accompanied by a satisfying parent–child relationship. In the systems literature, such situations are labeled cross-generational coalitions. In Malinen et al. (2010), however, the reverse discrepancy was found, that is, families with satisfying spousal relationships and problematic parent–child relationships. This suggests that in families with young children, coalitions may be formed between the parents. In some families, problems with a child may bring the parents closer together as they attempt to compensate in their spousal relationship for negativity in the parent–child relationship. Well-functioning boundaries between family subsystems may also help parents to maintain satisfaction in the spousal relationship in the presence of problems with the child (see S. Minuchin, 1974). Furthermore, as speculated by Goldberg and Easterbrooks (1984), spouses whose relationship is highly intimate may even experience the child as interfering with their relationship.

## Conclusions

For parents, good quality in one family relationship is often accompanied by good quality in another family relationship. In other words, several studies suggest that happy spouses are often also happy parents. This finding, however, simplifies the nature of family life. There are both theoretical and empirical grounds to suppose that families differ in how these two family relationships are connected. For example, studies have identified several clearly different family types, thereby pointing to a more nuanced picture of family life.

We thank Journal of Marriage and Family, the National Council on Family Relations, and Blackwell Publishing for a possibility to use the article “Happy spouses, happy parents? Family relationships among Finnish and Dutch dual earners” (Malinen et al., 2010) as a basis for this entry.

## Cross-References

- ▶ Dual-Earner Couples/Dual-Career Couples
- ▶ Family Life Cycle Stages
- ▶ Fatherhood
- ▶ Finland
- ▶ Marital Adjustment
- ▶ Marital Communication
- ▶ Parent-Child Relationship(s)
- ▶ Regression Coefficients
- ▶ Relationship Satisfaction

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# Haq, Mahbub ul (1934–1998)

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## Birth, Education, Work History, and Main Contributions

Mahbub ul Haq was the founder of the Human Development Report (HDR). Amartya Sen praised him as "an outstanding economist, a visionary social thinker, a global intellectual, a major innovator of ideas who bridged theory and practice, and the leading architect in the contemporary world of the assessment of the process of human development." (Sen, 2008).

Haq was born in Punjab in 1934. He obtained his first degree from Punjab University in Pakistan. He attended King's College, Cambridge University, where he met Sen, a fellow student with whom he developed a lifelong friendship and partnership in the construction of the idea of human development. Haq completed his PhD at Yale and postdoctoral work at Harvard. By disposition, Haq was an originator and practitioner of public policy rather than an academic. His professional career consisted of service in the Pakistani government, the World Bank, and the ▶ United Nations Development Program (UNDP). He died on July 16, 1998 in New York.

Haq served in the Pakistani civil service and government in the 1960s and 1980s. In the 1960s, he was the chief economist of Pakistan's planning commission and wrote his first book *The Strategy of Economic Planning* (Haq, 1963). He prepared a highly acclaimed second five-year plan which was credited with helping Pakistan achieve a high rate of economic growth, but he was keenly aware that the high economic growth did not translate into equitable and ▶ social development. In the 1980s, Haq was the Planning and Finance Minister of Pakistan, during which he mobilized resources for education, family planning, and poverty reduction.

From 1970 to 1982, Haq was at the World Bank as the Director of the Policy Planning Department and Chief Economic Advisor to Robert McNamara, then president of the Bank. He worked closely with McNamara to devise strategies to reduce poverty in developing countries. Haq became one of the proponents of the basic human needs approach to development (Streeten, Burki, Haq, Hicks, & Stewart, 1981). In *The Poverty Curtain* (Haq, 1976), Haq critiqued two decades of growth without development and suggested policies that can advance new patterns of development in low-income countries. He also outlined ways of implementing the then-popular proposal for a New International Economic Order.

From 1989 to 1995, Haq became a Special Adviser to the UNDP Administrator. It was at UNDP that Haq's intellect, experience, and passion combined to help him capture the imagination of academics, policy makers, journalists, and the global population at large. He gathered social scientists including Amartya Sen, Meghnad Desai, Paul Streeten, Gustav Ranis, Keith Griffin, Frances Stewart, and Sudhir Anand to help him launch the Human Development Report in 1990 (Haq, 1995). He excelled at giving practical meaning to the diverse ideas generated at these meetings. The ▶ Human Development Index (HDI) which Haq devised has since nearly unseated the dominance of per capita income as the measure of development and well-being. Haq recognized the limitations of the HDI and in subsequent HDRs complemented it with other composite indexes, including a Political Freedom Index (PFI), the ▶ Gender-related Development Index (GDI), the Gender Empowerment Measure (GEM), and the Human Poverty Index (HPI). He also introduced the concept of human security in the 1994 report.

Haq noted that India and Pakistan were behind a number of African countries in terms of the HDI. He attributed this to the huge military budgets of both countries and became an advocate for reducing military expenditure. He was inspired by the example of Costa Rica, a country that abolished its army and was able to spend a third of its budget on education and health, ensuring the stability of its democracy and performing well in its HDI ranking. In his last years, he established a regional Human Development Centre for South Asia to bring the state of human development to the attention of policy makers. The replication effect of this is the publication of more than 500 regional, national, and subnational HDRs (Haq & Ponzio, 2008). To honor Haq, the UNDP has created the Mahbub ul Haq Award for outstanding contribution to human development.

## Cross-References

- ▶ Gender-Related Development Index (GDI)
- ▶ Human Development Index

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## Harassment at Work

▶ Violence in the Workplace

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## Hardiness

▶ Resilience

## Harm Reduction for Opiate Dependence

► Methadone Treatment for Opiate-Dependent Persons

## Harmonizing Longitudinal Data on Households and Individuals for Cross-National Comparisons

► Household Panel Comparability Project

## Harmony

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### Synonyms

Coherence; Integration; Mutual understanding

### Definition

The term harmony derives from the Greek word *harmos*, joint. It is used in different domains: In music, it refers to the combination of simultaneous musical notes in a chord. In the current language, it is used to describe a pleasant and coherent combination of elements in a whole – an object, a landscape, a living being, a person's behavior, and a community. In psychology, harmony refers to a positive state of inner peace, calmness, and balance, as well as the feeling of being tuned with the world. In the social sciences, it is used to describe a pattern of relationships within a social group and between individuals and their social context.

### Description

#### Historical Roots

Beyond philosophical and conceptual differences, in all cultural traditions harmony has been directly related to well-being, and it represents an indicator of a good quality of life, at both the individual and social levels. The ancient Western and Eastern cultures (Chenyang, 2008) conceptualized harmony as an ideal condition at both the individual and social levels. In Greece, Pythagoras referred to harmony in his philosophy of numbers; the Stoics connected it to the ideal of evenness of judgment and detachment; Plato included harmony in his definition of the just man, showing balance between reason, spirit, and appetites; and Epicure related it to the concept of ataraxia (freedom from worries or anxiety). In Eastern cultures, harmony endorsed more articulated meanings. The ► Chinese culture described harmony in connection with *Yin* and *Yang*, the cosmic and complementary forces governing the universe and the life of living beings through their dynamic interplay. Within this framework, harmony is a condition of balanced relationship between the individuals and their social and natural environment. The Chinese word "*he*" (harmony) includes meanings such as "on good terms with each other," "gentle, mild," and "peace." Similar meanings are conveyed by the analogous terms in Japanese and Korean traditions. ► Confucianism emphasized the value of harmony at the collective level and the prominence of maintaining positive social relationships over achieving individual goals. However, rather than representing passive conformity, social harmony must be subordinate to the higher-level goals of benevolence and righteousness (Leung, Tremain Koch, & Lu, 2002). In the Indian tradition, the concept of *anasakti*, nonattachment, shares some key aspects with the ideal of individual harmony developed in the other traditions. Anasakti (Pande & Naidu, 1992) is a condition of mental balance and equanimity in dealing with life events without being emotionally affected by their consequences, and it embodies both spiritual growth and action orientation. To be detached implies to perform any action with dispassion, without concerns for failure or success.

### Harmony as a Social Dimension

Contemporary theories in psychology and the social sciences have detected two general patterns of social organization: individualism and collectivism. Broadly speaking, collectivistic cultures emphasize the prominence of social norms and rules in directing individual behavior, while in individualistic cultures the primary unit is the person. As a consequence, individualistic societies foster independence, autonomy, and personal control within all kinds of interpersonal relationships, while collectivistic societies give priority to social control and social harmony, educating individuals to modify their behavior in order to adjust to group and context features, rather than trying to change them. Emphasis on interpersonal harmony also affects the individual adaptation to the environment. Collectivistic societies foster the adoption of indirect and collective control strategies, which entail the sharing of responsibility among individuals participating in the same task, and the preservation of harmony even in case of failure or negative outcomes. Along this research line, Morling and Fiske (1999) formalized the concept of harmony control, which leads individuals to recognize the agency residing in contextual, social, or spiritual forces. By adopting this strategy, individuals attempt to merge with these forces, thus accepting their roles and their environment, without acting directly on them.

Other scholars have pointed to a crucial distinction between two possible interpretations of social harmony, which can be defined as a goal per se, from the Confucian *value perspective*, or as a means to an end, in line with an *instrumental perspective* (Leung et al., 2002). In this second case, societies and communities pursuing consensus, conformity, and conflict avoidance can foster social harmony as a strategy to achieve their goal. Ho and Chan (2009) related social harmony to the concept of social quality, which includes social-economic security, social inclusion, ▶ social cohesion, and ▶ empowerment to develop individual potential. The relevance of social harmony in Western cultures was highlighted in a study conducted in the United States to assess the relationship between health and four indicators of quality of life: security, mastery, harmony, and autonomy (Ferriss, 2002). Only harmony was significantly associated with health. In this study, however, harmony referred to features of the physical and social environment, including an index of environmental toxins, suicide rate, unemployment rate, crowded housing, and income.

### Harmony as a Psychological State

At the psychological level, harmony is included in various constructs, all of them related to well-being. Munoz Sastre (1998) in a qualitative study conducted with French participants showed that ▶ self-acceptance and harmony in relationships had a major impact on well-being judgments. Lu (2001) invited Chinese college students to provide their own definition of happiness. Answers included reference to a harmonious and dynamic state of existence, related to individual satisfaction or contentment, agency, spiritual enrichment, and a positive outlook. Jason and his colleagues (2001) explored harmony as a major component of the construct of wisdom, comprising balance, self-love, good judgment, appreciation, and purpose in life. More recently, harmony emerged as a major component of well-being in the Eudaimonic and Hedonic Happiness Investigation (Delle Fave, Brdar, Freire, Vella-Brodrick, & Wissing, 2011). Western adult participants from different countries reported inner harmony as a prominent dimension of happiness, referring to ▶ peace of mind and evenness, an equanimous attitude in dealing with life events, and the perceived balance between different needs, commitments, and aspirations. Harmony was finally investigated as a dimension of well-being in connection with ▶ spirituality, together with meaning and purpose in life, social connectedness, peacefulness, gratefulness, forgiveness, and self-discipline (Koenig, 2008).

### Harmony as Balance Across Life Domains

Individuals' perception of well-being across daily domains provides useful information to identify areas of potential change, development, and ▶ quality of life promotion. Sirgy and Wu (2009) explored cross-domain balance in promoting well-being moving from the assumption that, in order to satisfy the full spectrum of human needs, people have to engage in multiple life domains. A ▶ balanced life derives from fulfillment in various important domains, combined with little or no negative effect in other ones. The importance of cross-domain balance clearly emerged in the WHO's definition of quality of life as a multicomponential construct (WHOQOL Group, 2004). Other studies have highlighted that impairments or limitations in one life domain do not significantly modify the general QoL level, which is relatively stable (Cummins & Nistico, 2002). This can be related to adaptation, as well as to the tendency to shift the importance of life domains according to the perceived have-want discrepancy, by upgrading the domains with small discrepancy levels (Wu, 2009).

### Future Directions

This brief overview suggests that harmony is a complex and multifaceted construct, still lacking of a systematic conceptualization within the psychological and social sciences. Further studies are needed, in order to better disentangle the features of this construct through cross-cultural comparisons. More generally, the concept of harmony deserves higher attention from researchers, practitioners, and policy makers, due to its key role in fostering well-being and quality of life.

## Cross-References

- ▶ Balanced Life
- ▶ Chinese Culture
- ▶ Confucianism
- ▶ Cross-Cultural Comparison
- ▶ Empowerment
- ▶ India, Quality of Life
- ▶ Music
- ▶ Peace of Mind
- ▶ Quality of Life
- ▶ Self-Acceptance
- ▶ Social Cohesion
- ▶ Spirituality

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# Hassles and Uplifts Scale

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## Synonyms

Daily hassles scale; Hassles scale

## Definition

This is a measure of everyday life stress.

## Description

### Original Scale

The Hassles Scale was developed in the early 1980s. Two papers were initially published with the scale (DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Kanner, Coyne, Schaefer, & Lazarus, 1981), indicating the scale's reliability and validity. In the Kanner et al. (1981) paper, it was found that scores on the Hassles Scale were predictive of changes in psychological well-being over a 1-year period among a sample of middle-aged residents of Alameda County, California. In a second paper, DeLongis et al. (1982), it was found that scores on the Hassles Scale were predictive of changes in health status. Importantly, in multiple regression analyses, the scores on the scale were predictive of changes in health, even after statistically controlling for major life events experienced over the same period. However, once scores on the Hassles Scale were statistically controlled for, major life events scores showed no independent effect on health status. The original scale asked respondents to rate day-to-day stressors experienced over a 1-month period.

### Revised Scale

The Hassles and Uplifts Scale was revised to allow for use in a daily diary methodology studies. The scale was thoroughly revised such that respondents were asked to rate the extent to which each of 53 common, everyday sources of stress has been a "hassle" for them that day. In the revised version, redundant items, as well as items that overlapped with psychological or somatic symptoms, were removed from the scale. In addition, the format of the scale was changed such that respondents rate each item for the extent to which it is both a hassle and an uplift on a 4-point scale ranging from 0 (none or not applicable) to 3 (a great deal). See, DeLongis, Folkman, and Lazarus (1988) for scale items, validity, and reliability information. This version of the scale works well in studies using a daily process, ambulatory monitoring, or daily diary methodology, as the items are worded very briefly, and rated daily in a few minutes time (DeLongis, Hemphill, & Lehman, 1992; Tennen, Affleck, Coyne, Larsen, & DeLongis, 2006). Typically, respondents are instructed to complete the scale at night just before going to bed. In initial work with the scale (DeLongis et al., 1988), 75 married couples were examined across 20 assessments during a 6-month period. Daily hassles were found to predict the occurrence of subsequent health problems such as flu, sore throat, headaches, and backaches. Furthermore, individual differences were found in the extent to which daily hassles were associated with health and mood across time. Participants with unsupportive social relationships and low self-esteem were more likely to experience an increase in health problems both on and following stressful days than were participants high in self-esteem and social support. In subsequent work (Bolger, DeLongis, Kessler, & Schilling, 1989) with a sample of community residing married couples, it was found that daily interpersonal hassles were most predictive of changes in mood among across time. Given this, in more recent work (DeLongis, Capreol, Holtzman, O'Brien, & Campbell, 2004), an even briefer scale to assess daily hassles that is more focused on interpersonal stressors has been used. Multiple versions of the Hassles Scale have been developed for use with a variety of populations, including Alzheimer's Caregivers (Caregiver Hassles Scale; Kinney & Stephens, 1989), and step-parents (DeLongis & Preece, 2002).

## Cross-References

- ▶ Daily Diary Methodology
- ▶ Everyday Life Experience
- ▶ Family Stress
- ▶ Social Support
- ▶ Ways of Coping Checklist

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## Hassles Scale

▶ Hassles and Uplifts Scale

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## Hazard Modeling

▶ Event History Analysis

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## Hazard Rate Models

▶ Survival Analysis

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## HDPI

▶ Household Disposable Personal Income

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## HDS-OA

▶ Hubley Depression Scale for Older Adults (HDS-OA)

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## Head Injury

▶ Traumatic Brain Injury

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## Headcount Ratio

▶ Watts Poverty Index

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## Headline Indicators for Children's Health, Development, and Well-Being

▶ Children's Health Index

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## Healing Gardens

▶ Gardens and Well-Being

# Health

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## Synonyms

Health related quality of life

## Definition

Health is not only something on which individuals can have very different views but also a concept which has inspired endless academic theorizing and dispute throughout the centuries. In addition, health is a personal matter which means something for each one of us in our everyday life. Hence, the meaning of health is neither simple nor unchanging (Baxter, 2004). However, the most well-known definition is that from the World Health Organization from 1948 defining health "as a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity" (World Health Organization [WHO], 1948).

## Description

The ideas of health are embedded in a variety of disciplines such as physiology, biology, medicine, social epidemiology, sociology, philosophy, and anthropology, resulting in many perspectives of what health means. For instance, health may be seen as absence of illness or deviation from the norm, balance or homeostasis, function, state or status, well-being, and meaning or quality of life (Baxter, 2004). Health is also described throughout concepts such as disease, illness, and sickness and viewed through different glasses such as biomedicine and social models. In addition, health may be seen as a subjective and objective matter (Baxter, 2004).

Subjective health is resting on people's own perception of the experience of their health (Baxter, 2004), often referred to as quality of life in medicine (Fayers & Machine, 2007), hence linking the perspective of subjective health to the concept of quality of life. In the social sciences, quality of life generally centers on aspects such as satisfaction with housing, local environment, and working situation. In the clinical context, aspects related to disease, treatment, and care are more relevant (Rokne & Wahl, 2011). Although subjective health is measured in various ways, research has shown that subjective health perceptions measured by a single-item question predict mortality and overall well-being (Fayers & Sprangers, 2002).

The concept of health-related quality of life was introduced early in the 1980s with the purpose to refine the concept of quality of life especially related to health and thereby establish a more relevant concept illuminating the subjective view of health and illness (Kaplan & Bush, 1982). However, health-related quality of life is still a loose definition and may include a variety of relevant aspects such as physical functioning, general health, emotional functioning, physical and emotional symptoms, cognitive functioning, coping, existential issues, and satisfaction with life (Fayers & Machine, 2007). In this way, some definitions include the health and patient perspective, while others are more global in character (Shumaker & Naughton, 1995; Fayers & Machine, 2007).

Theoretical models are established to illuminate possible relationships between health aspects (objective and subjective) and quality of life. One example is the model of Wilson and Cleary from 1995 which describes anticipated connections between factors such as morbidity, symptoms and aspects of quality of life, and personal and environmental factors. In this model, health can be placed on a continuum of increasing biological, social, and psychological complexity, including biological and physiological variables, symptom status, functional status, general health perceptions, and overall quality of life.

The biological and physiological factors are functions in cells, organs, and organ systems. Symptoms refer to the individual's perception of abnormal physical, emotional, and cognitive states. Functional status refers to the individual's ability to perform specific tasks. General health perceptions relate to the individual's experience of physical, mental, and social well-being. Finally, overall quality of life is the individual's experience of being satisfied or happy with life in general. In addition, psychological characteristics, such as personality traits and motivation, values and preferences, as well as environmental factors, may influence the continuum. The further we move along this continuum, the impact of psychological and social factors becomes more complex (Wilson & Cleary, 1995). During the last years, empirical research has illuminated different aspects of the complexity of the health and quality of life continuum across contexts (e.g., Mathisen et al., 2007; Wahl et al., 2005).

## Cross-References

▶ Quality of Life (QOL), an Overview

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# Health and Connectedness with God

▶ Health-Related Quality of Life and Reliance on God's Help

# Health and Role Functioning Item Bank Development

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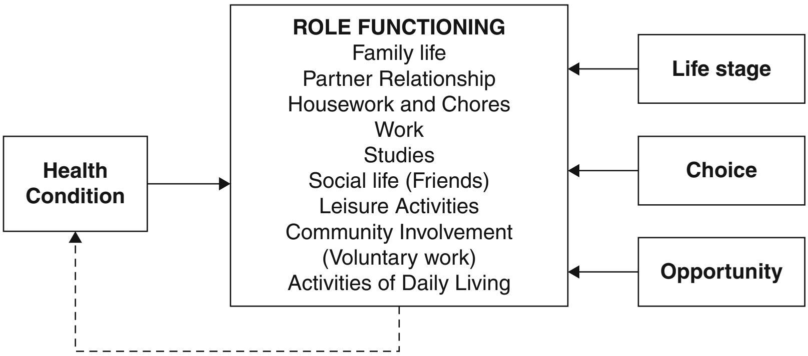
## Synonyms

Role functioning item bank

## Definition

In 1948, the World Health Organization defined health as not only the absence of disease but also the presence of physical, mental, and social well-being (World Health Organization [WHO], 2002). With the introduction of social well-being

**Health and Role Functioning Item Bank Development,**
**Fig. 1** Conceptual model of role functioning



as part of the definition of health, assessment of role functioning became an important outcome in health research. In the area of outcomes measurement, role functioning refers to the capacity of an individual to perform activities typical to specific age and particular social responsibility (Sherbourne, Stewart, & Wells, 1992; Wiersma, 1988). The theoretical conceptualization of the role functioning construct was inspired by the biopsychosocial model of health and disability and the International Classification of Functioning, Disability and Health (ICF) (WHO, 2002). We used a model based on this theoretical framework to guide the development of an item bank (Fig. 1). The model defines role functioning as involvement in life situations related to family life, partner relationship, household chores, work for pay, studies, social life (including interactions with friends), leisure time activities, community involvement (including volunteer work), and everyday living activities. The role functioning item bank is a set of 64 questions calibrated on a common metric designed to improve and standardize the assessment of the impact of health on role functioning in the domains of family, social, and occupational lives.

## Description

### Content

The role functioning item bank has 64 items covering 3 general content areas (17 items on family life role functioning, 14 items on social life role functioning, 24 items on occupational role functioning, and 9 items previously used in the role participation scales of the SF tools). Each new item was designed to cover only one of the content domains. All of the items included health attribution (e.g., "▶ health" was specified as the factor influencing the level of functioning) and a 4-week recall period. All items in the bank use attribution to health as cause for functional impairment, for example, "Did your health make it hard to start work on time over the past 4 weeks?" Five-point scale was used in the response scale of each item and response choices were worded to correspond to the question (Anatchkova & Bjorner, 2010).

### Administration Formats

The RF bank can be used for the development of measures that can serve varying research needs. Measures with a fixed number of items and computer adaptive tests (CAT) can be developed and multiple administration formats can be used. Both fixed item number and CAT measures can be administered over the Internet, presented through a variety of electronic devices (e.g., laptop, iPhone, iPad, PDA) or through Interactive Voice Response (IVR) system. Item bank-based short forms can also be presented in a conventional paper and pencil format. Any of these computer-based assessments has the advantages of immediate data entry, fast and easy scoring, and real-time plotting of results. In addition a CAT provides short, accurate assessments tailored to each individual respondent (Cella, Gershon, Lai, & Choi, 2007). The logic of CAT mimics a clinical interview. Using parameters from the ▶ IRT measurement models, CAT selects each item based on the response provided to the previously administered questions from the bank. As a result of this logic, respondents answer a small number of informative items but gets an accurate estimate of role functioning.

## Uses of the Item Bank

An item bank can be used as the source for a wide variety of scale assembly approaches resulting in fixed-length measures, targeted tests for specific populations, or CAT (Thissen, Reeve, Bjorner, & Chang, 2007). All measures derived from the role bank are examples of generic patient-reported outcome (PRO) instruments that can be applied to a wide range of health problems affecting role functioning. Items can be selected from the entire trait spectrum to construct measures of any length. Since all the items in the bank are calibrated on the same scale, results from different bank-derived measures are comparable.

Fixed-length measures constructed from the bank can serve different goals depending on the interests of the user. Short measures can be constructed to cover the entire trait range. Results of such measure would not be very precise, but would be accurate enough to allow the differentiation of patients with different levels of impairment with reasonable accuracy at the group level. If the measure is used with special populations, a more focused short measure can be constructed from the bank that covers a narrower range and provides better precision of assessment. For example, for patients with known severe role limitations, a measure could be composed covering only the poor functioning end of the scale. Short-form measures could also be constructed to target a specific role of interest. For example, for active participants in the work force, a measure focusing on occupational role functioning can be constructed.

CAT assessments based on the bank can be useful when a higher level of precision of individual assessment is required, for example, in the case of an individual care of a patient with role impairment. CAT assessments allow for measurement of the constructs tailored to each individual and thus can produce the highest level of individualization in outcomes measurement. In the cases where this level of precision is needed for some, but not all, members of a population skip patterns, fixed forms and CAT can be used to provide the most appropriate assessment of role function for each individual. As all measures are using the precalibrated item bank, all measures are based on the validity of the full bank and produce standardized scores on the same scale (Thissen et al., 2007).

## Instrument Development

The theoretical model described above guided the work of the development and evaluation of the item bank assessing the impact of health on role functioning using ▶ item response theory (IRT). The development of any bank is a multistage process designed to ensure the quality of the final bank (Bjorner, Chang, Thissen, & Reeve, 2007). A high-quality item bank is based on a clear conception definition of the construct to be measured. Items should be developed after a careful review of existing literature and based on input from patients and other stakeholders. Finally, item should go through careful psychometric testing and interpretation guidelines should be established to help the clinical interpretation of the results. To meet these criteria the steps described below were completed as part of the item bank development.

*Comprehensive Review and Content Evaluation.* A review of the literature and the item content of existing role function measures was conducted as initial step in order to identify relevant aspects of role functioning across the adult life span. Commonly assessed areas were work (including presenteeism and absenteeism), studies, housework and chores, family roles, and social activities. An increased interest in the assessment of impact of disease on work productivity was evident.

▶ *Focus Groups.* A series of eight focus groups were conducted with a convenience sample of 38 English-speaking adults. Groups were stratified across four age groups and conducted separately by gender. Participants were asked to identify relevant social roles (rank the roles by importance) and to discuss perceptions of the impact of health on their role functioning. Participants of all ages identified family roles as most important. There was some age variation in the importance of social life roles, with younger and older adults rating them as more important than middle-aged adults. Occupational roles were identified as important by younger and middle aged participants. All participants recognized the potential of health problems to affect role participation and examples were provided particularly by sufferers of chronic ailments. The participants were also presented with a sample of role functioning items and asked to provide suggestions on the format and content of these items. Participants found the sample items clear and easy to understand. Five response choices were preferred. All evaluated response options were rated as identical in meaning and not likely to influence the responses (Anatchkova & Bjorner, 2010).

*Item Development*. Based on the results of the literature review, the content analyses of existing scales, and the themes from the focus groups interviews, new items were formulated in three major content areas of family, occupational, and social life roles consistent with the conceptual model. Seventy-five items assessing the impact of health on role functioning across the model domains (family life ($k = 29$, 4 positive), occupational life ($k = 28$, 2 positive), social life ($k = 18$, 3 positive)) were developed.

*Item Calibrations*. Evaluation of the properties of the developed items and their organization on a common metric was conducted as part of an item calibration study (Anatchkova, Rose, Ware, & Bjorner, 2011). Data were collected through an Internet panel. All items from the bank were presented one per screen. The battery included skip patterns, so respondents answered only questions that were relevant to their social roles (e.g., unemployed people were not asked questions on occupation). A total of 2,500 (51 % female, mean age 49, 77 % Caucasian) participants were recruited, including a general population sample of adults with no chronic conditions ($n = 1{,}055$) and participants with selected chronic conditions: asthma, heart disease, diabetes, autoimmune disease ($n = 1{,}445$). The data analyses involved the following iterative steps:

1. *Data quality examination*. Basic descriptive analyses were used to evaluate the quality of the sample and the data. All items were scored so that higher scores indicated better functioning and lower health impact. Item distributions were skewed, so 36 items with response options endorsed by fewer than 2 % of respondents were collapsed.
2. *Evaluation of assumptions of unidimensionality and local independence*. Evaluation of the dimensionality of the data was conducted through ► factor analysis and Mplus software (Muthen & Muthen, 1998–2004). For these analyses only data for participants answering all items in the bank were used, reducing the sample size to 1493. Conceptually based dimensionality (1–4 factors) and method effects reflecting positively and negatively worded items were explored in a series of models using factor analysis techniques. The best fitting model had four conceptual factors (social, family, occupation, old role bank) and two methods factors. Models with multiple conceptual factors fit the data better but demonstrated very high factor correlations (.8–.9). While a single-factor model with methods factors had a poorer fit, the high correlations in the multifactor model allow us to consider the role functioning bank sufficiently unidimensional for application that requires unidimensionality like item response theory. The assumption of local independence was evaluated through examination of residual correlations between items in the final model. Correlations higher than .2 were considered to indicate local dependence. As a result 5 items were excluded from further analyses.
3. *Tests for differential item functioning (DIF)*. Items were evaluated for potential DIF by demographic variables (gender, age, and chronic condition) using a ► logistic regression approach and a Nagelkerke $R^2$ coefficient $>.02$ as an exclusion criteria (Nagelkerke, 1991). Several items had a significant DIF by age, gender, or ethnicity, but did not exceed the preset 2 % $R^2$ cutoff limit of difference.

4. *Item parameter estimation*. Estimation of item parameters for each domain on a common metric was performed with the generalized partial credit model (GPCM) (Muraki, 1997) with PARSCALE software (Muraki & Bock, 1996). Item-fit evaluation was performed with IRTFIT (Bjorner, Smith, Stone, & Sun, 2007). Slopes in the bank ranged between .96 and 4.51; the mean threshold range was −.66 to −1.80. Eight of the bank items had significant misfit indicated by the fit indexes. Examination of the fit charts however indicated that violations of the fit were in acceptable range and all remaining 64 items were retained in the bank.

*Computer Simulations*. As part of the development of the role functioning item bank, preliminary assessments of the accuracy of the IRT-based algorithms for potential computer adaptive test (CAT) administrations were conducted using computer simulation methods. The goal of these simulations is to compare the psychometric merits of alternative strategies for programming CAT assessments of role functioning. For the simulations, responses to questions selected by CAT software were "fed" to the computer to simulate the conditions of an actual CAT assessment. Without "knowing" the response to any other items in the bank, the computer uses the IRT model to select the item with the highest "information function," given the patient's current score level. Given the answer to that question, the computer re-estimates the domain score and the confidence interval (CI) around that score and decides whether or not to continue testing.

For these real data simulations, we used the data from the item calibration study described above. A starting general item with medium difficulty was selected for all simulations ("In the past 4 weeks, how much of the time did your health limit your ability to concentrate on work or daily activities?"). Several CAT algorithms were evaluated: 1/ a fixed 6-item stopping rule without content balancing, 2/ a fixed 6-item stopping rule balancing administration of items from the three content areas (family, occupation, social), and 3/ a precision-based stopping rule. The three stopping rules had very similar precision levels and were comparable to the results based on the entire bank. We believe that the content-balanced rule provides better content validity and used it in the field test of the computerized test (Anatchkova et al., 2011; Anatchkova, Ware, & Bjorner, 2011).

## Validity Studies

The validity of measures derived from the role functioning item bank has been tested in two independent studies. In the first study the final item bank with calibrated items and a 6-item content-balanced stopping rule were used to program a role functioning CAT (RF-CAT). The RF-CAT was tested in a sample of an Internet panel study participants ($n = 444$ of which 225 with selected chronic conditions affecting role functioning, mean age 50, 51 % were female, 79 % Caucasian). The field test aimed to evaluate the validity of the RF-CAT and to compare the new instrument with an established measure used to assess role functioning: the Short Form (SF)-36 Role Physical (RP) subscale. The SF12v2 was administered and used in comparison of user acceptance.

The RF-CAT performed well in this study. Across all assessments, the CAT used 25 of the items in the item bank, but only six of the items were administered in any particular assessment. The average time for completion was 66 s. There were no ceiling nor floor effects – meaning that no respondent selected only the lowest or only the highest response option for all items. The score accuracy achieved by the actual RF-CAT with six items was better than the score accuracy of the SF-36 RP scale (four items). The RF-CAT covered the score range 30–50 with ▶ reliability of.95, while at the same reliability level, the RP scale covered the score range 38–45.

Using the available data from RF-CAT with six items, we also simulated a four-item CAT for a head to head comparison with the SF-36 RP scale. The four-item CAT still had better precision than the SF-36 RP scale, covering the score range of 33–48 with reliability of .95, but did not provide score assessment in the higher end of the range. RF-CAT and all legacy measures produced scores that were significantly different for participants with and without chronic conditions and across levels of self-reported general health indicating good validity. As expected, participants without the selected chronic conditions had higher role functioning scores. The scores also increased with better levels of self-reported general health. Participants' evaluations of the tools were positive overall, with no differences in ratings observed between the RF-CAT and static assessments, indicating the RF-CAT was as well accepted as the SF12v2.

For the second study we selected 10 items from the bank based on their information function and content and included them in interviews with patients having suffered a coronary event. These analyses were performed as part of the TRACE-CORE (Transitions, Risk, and Actions in Coronary Events: Center for Outcomes Research and Education) study. We tested the validity of a simulated 4-item CAT based on the 10 items in adults ($n = 759$) who were interviewed during an ACS hospitalization for the TRACE-CORE. We compared score accuracy and ability to discriminate between groups based on levels of self-reported general health (SF-36), depression (PHQ9), and anxiety (GAD7) for the 10-item and the 4-item CAT and the SF-36 RP and role emotional (RE) scales. The simulated CAT improved measurement precision and expanded measurement range by.5 SD when compared to the SF-36 RP scale. All measures discriminated across levels of general health, depression, and anxiety ($p <.0001$). The instruments showed high agreement on the mean score for each subgroup, but the CAT scores had lower SDs. Relative validity coefficients suggest that CAT discriminated better than the SF-36 RP and RE scales. TRACE-CORE is currently ongoing and will allow for further validation work using clinical criteria and predictive analysis.

## Comparison to Other Tools

In reviews of role participation and functioning measures in the fields of handicap or disability research (Cardol et al., 1999; Dijkers, Whiteneck, & El Jaroudi, 2000), psychiatry (Hardy & Conway, 1988), the ICF framework (Perenboom & Chorus, 2003), general outcomes research (McDowell, 1996), and occupational roles (Lofland, Pizzi, & Frick, 2004) identified more than 40 generic measures assessing aspects of role participation and targeting different populations. Even more scales can be found in disease-specific instruments. Various theoretical perspectives and approaches have been used in the development of these measures, but most of the measures can be viewed as loosely related to role theory or the WHO model of disease, as measures assess level of functioning as part of a social role. Existing measures are quite diverse in format and focus of assessment, comprehensiveness, psychometric properties, areas of use, and popularity with researchers (Anatchkova & Bjorner, 2010). Most measures are static in the sense that all respondents are answering the same items. The RF can be used for the development of similar static measures but allows researchers to tailor their measure to the need of each individual project. Compared to the most widely used measures of role functioning – the role physical and role emotional scales of the SF-36 – the RF bank can provide higher ceiling and lower floor and tailored individual assessment, differentiating between roles in the family, social, and occupational domains, which are evaluated together in the SF-36 scales.

Recently as part of the PROMIS initiative (www.nihpromis.org), significant efforts have been made to develop item banks assessing various aspects of health, including item banks assessing satisfaction with participation in social activities and ability to participate in social activities (Hahn et al., 2010). Research efforts of our team were independent, but our work has a lot of similarities with the approach used in PROMIS for item bank development, including a focus on the ▶ content validity of the project from the early stages, use of a similar approach to sampling and data recruitment through the use of an internet panel, and similar analytic strategy (Reeve et al., 2007). There are also some important differences in our approach to the development of an assessment of health impact on role functioning. The most important of these decisions was to use health attribution in all of the new items in the bank in order to focus the scope of the assessment. This decision may have helped with addressing some of the inherent complexity of the construct and allowing a more precise assessment of the influence of health conditions on role functioning (Anatchkova et al., 2011). We intended the attribution to health as a widely inclusive attribution, but some research has suggested that participants perceive this attribution as mostly referring to physical health, and careful evaluation of the bank for participants with mental health conditions is required. Another difference between the banks is in the length of the reference period – the RF bank uses a recall period of 4 weeks, while the PROMIS banks use a 7-day recall period. Additional studies are needed to directly compare the performance of the different banks and evaluate their practical advantages.

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# Health and Violence

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## Synonyms

Well-being and abuse

## Definition

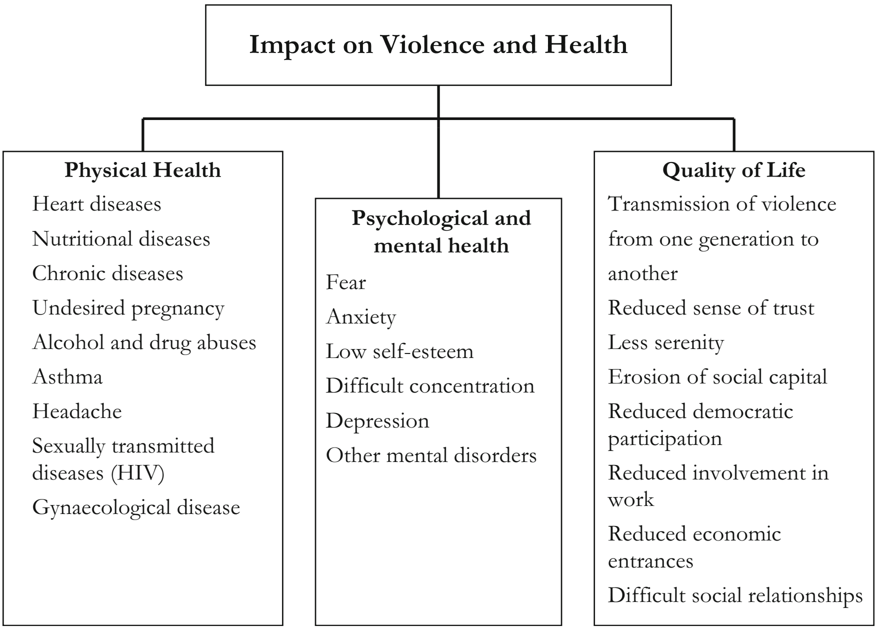
The World Health Organization (WHO) defined ▶ health in 1948 as a "state of complete physical, mental and social well-being', and not merely absence of disease or infirmity" (World Health Organization, 1948), while in 1996 defined ▶ violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation" (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). The medical and the social science's literature has demonstrated that violence and their different types have negative consequences on the health of whom is victim of violence and on his/her more general ▶ quality of life.

## Description

From the 1960s, violence has been recognized by WHO as a ▶ public health issue, although in many countries violence prevention is still a new or emerging field in public health (Krug et al., 2002). Violence is a very complex, multifaceted, and multidimensional phenomenon. According to the sociological literature and to the more recent WHO reports on health and violence (Krug et al., 2002; World Health Organization, 1996), there are different theories and factors at different levels (micro, meso, and macro) which explain violence (World Health Organization, 1996).

First of all, the etiological and psychological perspectives grounded on Freud's aggression theory (Freud, 1976) (aggression) focus on the single individual. These theories identify specific biological factors, psychological disorders, and identity structure (such as stress disorders or perverse narcissism) and deviant behaviors such as being alcohol or drug addicted (addiction) in explaining why a person becomes violent against another one (victim of violence). From this theoretical frame, violence is understood as a "natural" behavior of human beings with the function to assure survival and subsistence of the species in defending his/her territory (Rebughini, 2004).

A second group of theories at a meso level with the aim of explaining violence focus on the nature of the relationship between two persons interacting in different social ambits such as inside the family – the so called 'domestic violence' (cfr. Anderson, 1997; Dobash & Dobash, 1979, 1992; Gelles 1976, 1980), at the workplace, and at school (meso level). The relationship, which leads to violence, is the one in which the persecutor of violence does not recognize the other person (victim of violence), with whom he/she interacts, as "equal" to him/herself in terms of acceptation and recognition of his/her identity and subjectivity (Honneth, 2002), in terms of needs and ▶ human rights (Emerson, Ferris, & Gardner, 1998; Rebughini, 2004). Moreover, the sociologist Norman Denzin analyzing the ▶ domestic violence shows that the negative symbolic interaction between the persecutor and the victim is a complex process that



**Health and Violence, Fig. 1** Impact of violence on health

starts with an emotional outburst of the persecutor, continuous with an initial denial of what occurred by the victim, and with a complete denial of any responsibility from the persecutor. Finally, it ends with the moral and personal destruction of the victim as a person (Denzin, 1984), involving also negatively all other members of the family (children, elderly) (▶ family stress) (Tognetti Bordogna, 2010).

A third category of theories explaining violence at a macro level focuses on ▶ social inequalities existing in society in terms of economic, social, cultural resources but also in terms of power relation. For example, in intimate relationship, the partner with a lower income, with less social capital, and with lower level of ▶ education and power is more likely to become victim of violence due to his/her sense of inferiority and his/her reduced capacity to defend him/herself from violent attacks (physical, verbal, economic) (UNICEF, 2000; Greco, 2008).

Violence in its different forms – physical, sexual, psychological, economic, emotional, and symbolic – has a negative impact both on physical, psychological, and mental health and, moreover, on the quality of life (see Fig. 1).

First of all, for what concerns the physical health, violence can produce wounds, heart diseases, nutritional diseases, chronic diseases, undesired pregnancy, alcohol and drug abuses, ▶ asthma, headache, sexually transmitted diseases (HIV), gynecological diseases, abortion, smoking, obesity, and high-risk sexual behavior.

Secondly, the medical and sociological literature has identified the following diseases concerning the psychological and mental health due to violence: fear, ▶ anxiety, low ▶ self-esteem, difficult concentration, depression, other mental disorders, and alcohol abuse.

Third, the literature points out how violence affects negatively the quality of life. More precisely, the more widespread effects on the quality of life are the transmission of violence from one generation to another, less sense of trust, less serenity, erosion of social capital, reduced democratic participation, reduced involvement in work, reduced economic entrances, difficult social relationships, and difficulty in concentration.

Forth, in the more extreme cases of violence, the impact on the individual can be fatal: suicide or homicide and death due to fatal disease such as HIV (Greco, 2008) (HIV/AIDS).

## Cross-References

- ▶ Addiction, An Overview
- ▶ Anxiety
- ▶ Asthma
- ▶ Domestic Violence
- ▶ Education
- ▶ Family Stress
- ▶ Health
- ▶ Human Rights
- ▶ Obesity, an Overview
- ▶ Public Health
- ▶ Quality of Life (QOL)
- ▶ Self-esteem
- ▶ Sexual Behavior(s)
- ▶ Social Inequalities
- ▶ Violence

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# Health and Well-Being of Older Europeans

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## Definition

The World Health Organization has identified ▶ health as a state of complete physical, social, and psychological well-being (World Health Organization [WHO], 1948). Thus, health is considered a holistic concept which is characterized not just by an absence of illness but also by the presence of well-being and the ability to function in different facets of life. Health can be conceptualized in objective (e.g., presence of chronic illness or conditions) and subjective (e.g., self-ratings of general health) terms. It is widely argued that self-rated health encapsulates best a holistic view of health and it has, therefore, been a popular measurement choice in the assessment of health among older adults.

Well-being is concerned with the presence of positive psychological states, and is broadly conceptualized according to one of two traditions: ▶ hedonism or eudaimonism. Hedonistic approaches to well-being emphasize the importance of ▶ pleasure, ▶ enjoyment, and comfort, while eudaimonic proponents stress that well-being goes beyond the presence of pleasure and enjoyment to encompass meaningful life and goal pursuits. The majority of research on health and well-being in older adults has been conducted using a hedonic conceptualization of well-being.

## Description

As in the rest of the world, ▶ life expectancy in ▶ Europe continues to rise. It is estimated by the WHO that by 2025, one third of Europe's population will be aged 60 and above (WHO, 2002). With concurrent decreases in birth rates in Europe, older adults represent an increasing proportion of the European population. Increases in chronological age tend to be accompanied by loss of function and the development of multiple chronic diseases. Such declines in physical functioning and objective health are often complemented by reductions in self-reported perceptions of health and well-being (Pinquart, 2001), although it is not always the case.

Seminal work by Mossey and Shapiro (1982) showed that self-rated health is a stronger predictor of ▶ mortality in older age than a range of physical health measures. With regard to the relationship between health and well-being, self-rated health, in contrast to objective health, is also a better predictor of ▶ subjective well-being (Diener, Suh, Lucas, & Smith, 1999). These differential relations can be partly explained by an ▶ adaptation process, whereby people who experience poor health compare themselves to individuals who are worse off than themselves (downward social comparisons) as a means of protecting their own levels of well-being.

### State of Health and Well-being in Older Europeans

Research examining health and well-being among older European adults is accumulating. Using representative survey data from the USA, England, and continental Europe, evidence suggests that older adults aged 50–74 in continental Europe report greater levels of health than their North American and English peers (Avendano, Glymour, Banks, & Mackenbach, 2009). However, a large ($n = 27{,}000$) cross-national representative survey in Europe (SHARE; Börsch-Supan, Hank, & Jürges, 2005) has shown there are health variations within continental Europe (Ploubidis, Dale, & Grundy, 2012). The greatest levels of health are found in the Scandinavian countries, Germany, the Netherlands, and Switzerland, whereas older adults in Spain, Italy, and Poland have the lowest health scores.

▶ Life satisfaction is one of the most widely studied indicators of well-being in older adults. A survey conducted with 50–90 year old adults in six European countries (Austria, Italy, Luxembourg, The Netherlands, the United Kingdom, and Sweden; $n = 2{,}417$) showed that levels of life satisfaction are relatively high (Ferring et al., 2004). However, intercountry differences exist with Northern Europeans again tending to report higher levels of life satisfaction than Southern Europeans (Delhey, 2004). This pattern was also evident in the 2007 ▶ European Quality of Life Survey on subjective well-being (minimum sample size of 1,000 people per country) conducted among European adults by the European Foundation for the Improvement of Living and Working Conditions (Watson, Pichler, & Wallace, 2010).

### Profiles of Health and Well-being in Older Europeans

It is generally the case that people who have greater levels of well-being also report greater levels of health (e.g., Diener, 2000; Lyubomirsky, King, & Diener, 2005; Lyubomirsky, Sheldon, & Schkade, 2005). However, the strength of the relationship between health and well-being seems to vary. Thus, while some older adults with fragile health report low levels of well-being, others report moderate or relatively high levels of well-being (Smith & Baltes, 1998). A potential moderating variable in the relationship between health and well-being is age. For example, using a representative sample of older German adults, Wurm, Tomasik, and Tesch-Römer (2008) revealed that the onset of a serious health event influences self-ratings of health and well-being more profoundly in middle-aged than in older adults.

Examining typologies or profiles of individuals which are based on variables related to health and well-being may be particularly informative with regard to understanding individual variations in health and well-being. Cluster analytic approaches are useful toward this end as they can identify groups of individuals who have similar scores on a combination of variables of interest (i.e., health and well-being) and different scores to individuals from other groups. Thus, it is not surprising that cluster analysis has been used in a range of research studies with European older adults.

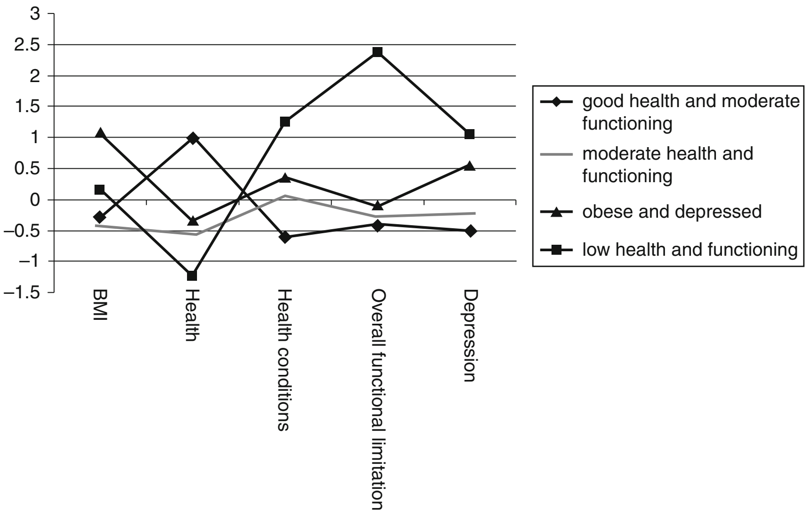
A series of cross-sectional (Smith & Baltes, 1997, 1998; $n = 516$) and longitudinal (Gerstorf, Smith, & Baltes, 2006; $n = 132$) studies were conducted to identify subgroups of German older adults based on variables representing health (e.g., functional capacity) and functioning (social and psychological variables). Gerstorf et al. identified three subgroups which were relatively stable in that two-thirds of the participants identified within a particular cluster group remained in the same group 6 years later. The profiles that emerged were labeled as an overall "positive profile" ($n = 61$), an "average profile" ($n = 28$), and a "high cognition, low self, and social profile" ($n = 41$). While the group of older adults belonging to the positive profile had greater levels of cognitive functioning than the third group, the scores were relatively similar. However, the groups demonstrated great differences in clinician-diagnosed number of chronic diseases (which constituted the assessment of health) and ▶ social integration (as assessed via questionnaire).

Another study using Swedish older adults aged 75 and over ($n = 385$) examined cluster profiles based on variables measuring self-rated health, number of health problems, ▶ physical activity, and ▶ social support (Borglin, Jakobsson, Edberg, & Rahm Hallberg, 2006). These authors also identified three profiles varying in their levels of ▶ quality of life (high, intermediate, and low). Their results revealed that approximately one third of the participants had low quality of life.

Thøgersen-Ntoumani et al. (2011) conducted a cross-national study using a larger sample of older adults (aged 65 and above) residing in urban settings across six different European countries representing the North–south divide (England, Sweden, Finland, Estonia, Greece, and Italy; $n = 1{,}381$). Four groups of older adults were identified via cluster analysis based on variables assessing body mass index, self-rated health, number of chronic health conditions, overall functional limitations, and depressive symptoms. Group membership was subsequently validated by showing that the groups differed on well-being variables (life satisfaction and ▶ self-esteem) not used in the cluster analysis.

Following inspection of the scores of the subgroups, the largest group was labeled "good health-moderate functioning" (38.40 % of the total sample). This group of participants clearly represented those who aged successfully with high scores on self-rated health, a low number of chronic health problems and functional limitations, and a relative lack of depressive symptoms. They also had high levels of life satisfaction and self-esteem. The second largest group was called "moderate health and functioning" (30.80 %), as they displayed moderate scores on all variables used to define the groups. The third largest group was labeled "obese and depressed" (20.20 %). While participants in this group appeared to have low levels of well-being (high depression, low life satisfaction, and self-esteem), they did not display poor self-rated health or a high degree of functional limitations. Finally, 10.50 % of the participants belonged to a group characterized by poor health and low functioning. Clearly, this group constituted older individuals with poor self-rated health, a greater number of chronic health conditions, pervasive functional limitations, and high levels of depressive symptoms. Figure 1 graphically depicts the scores of the groups across the various variables that were used to form the groups.

The cluster groups were compared on a range of demographic (age, gender, education, nationality), social (social isolation), and health behavior (walking, smoking, and alcohol consumption) characteristics. The results revealed that older groups of participants and females tended to be overrepresented in the low health and functioning



**Health and Well-Being of Older Europeans, Fig. 1** Profiles of health and functioning as identified by Thøgersen-Ntoumani et al. (2011)

group. There was a tendency for the low functioning group to be less well educated and more socially isolated than the other groups. In addition, northern Europeans generally tended to report fewer functional limitations and lower levels of depression than their southern European peers. With regard to engagement in health behaviors, the patterns showed that older adults with low functioning were generally nonsmokers, alcohol abstinent, and reported low levels of walking behavior. Results from cluster analyses could be important when targeting different groups of older adults for health behavior interventions.

## Conclusion

The studies reviewed above reveal the heterogeneity with regard to the relationship between health and well-being in older Europeans. Currently, little is known about the reasons for such heterogeneity, but potential explanations have been proposed. These include the possibility that as people age, they come to expect deteriorations in health and subsequently start to redefine the criteria they use to define health and well-being (Wurm, Tomasik, & Tesch-Römer 2008). In addition, there is evidence to suggest that individuals adapt to their circumstances as a means of protecting their levels of well-being (Diener et al., 1999). Finally, in contrast to younger adults, older adults are more likely to base their self-ratings of health on ▶ attitudes and behaviors rather than objective health conditions (Borawski, Kinney, & Kahana, 1996). From a European perspective, the reasons for discrepancies in health and well-being between northern and southern Europeans include differences in income inequality and socioeconomic status (Ploubidis et al., 2012) but may also be due to cultural variations in perceptions and reporting of health and well-being (Desesquelles, Egidi, & Salvatore, 2009).

## Cross-References

- ▶ Health Promotion
- ▶ Health-Related Quality of Life
- ▶ Physical Activity
- ▶ Subjective Well-being
- ▶ Wellness

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## Health Behavior

► Cigarette Smoking and Drinking

## Health Behavior in School-Aged Children (HBSC)

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### Definition

Health Behavior in School-aged Children (► HBSC) is a cross-national research study conducted in collaboration with the WHO Regional Office for Europe. The study aims to gain new insight into and increase our understanding of young people's health and well-being, health behaviors, and their social context (Currie et al., 2008).

HBSC was initiated in 1982 by researchers from three countries, and shortly afterwards, the project was adopted by the World Health

Organization as a WHO collaborative study. There are now 43 participating countries, including most European countries, USA, Canada, and Israel.

The first cross-national survey was conducted in 1983/1984, the second one in 1985/1986, and since then data collection has been carried out every 4 years using a common research protocol. The most recent survey, the eighth in the series, was conducted in 2009/2010.

The most recent publications describing the outcome of the research are available online at http://www.hbsc.org/publications.html.

## Description

### Aims

Besides aiming to increase understanding of young people's health, the findings from the HBSC surveys are used to inform and influence health promotion and health education policy and practice at the national and international levels. To reach this aim, the different national teams involve politicians, trying to create a close link between health and educational departments, in order to guarantee a continuity of funding for personnel and activities (Young & Currie, 2009). Moreover, HBSC data are used to involve all the stakeholders through a dynamic, interactive, and multidirectional process and to realize linkage interventions including direct interactions and the use of intermediaries and knowledge brokers (Ward, House, & Hamer, 2009).

Research into children's health and health behavior and the factors that influence them is essential for the development of effective health education and health promotion policy, programs, and practice targeted at young people.

Thanks to the joint collaboration between the HBSC Network, WHO-Europe, and the Tuscany Region; three Fora were organized in Italy, bringing together all the main stakeholders in the field of *Healthy Eating Habits and Physical Activity* (2006), *Social Cohesion for Mental Well-Being among Adolescents* (2007), and *Socio-environmentally determined Health Inequities among children and Adolescents* (2009) in order to address possible intervention policies.

In order to develop effective intervention, young people's health must be considered in its broadest sense, encompassing physical, social, and emotional well-being. Health should be viewed as a resource for everyday living. Therefore, research about children's health needs to consider the positive aspects of health, as well as the risk factors for future ill-being and disease. To fully understand the patterns of health and health behavior in the adolescent population, attention should be paid to family, school, peer settings and relationships, as well as to the socio-economic environment in which young people grow up,

### Target Population and Samples

The target population of the HBSC study is young people attending school, aged 11, 13, and 15 years. This age span covers the onset of adolescence, the phase of challenging physical and emotional changes, and the middle teenage years when adolescents begin to consider future life and career directions.

The survey is carried out on a nationally representative sample in each participating country. National samples consist of approximately 1,500 participants from each age group (a total of 4,500 from each country).

### Data Collection and the Survey Instrument

HBSC is a school-based survey with data collected through self-completion questionnaires administered in the classroom. Fieldwork for each cross-national survey is carried out over a period of 7–8 months, from October to May of the following year. This reflects the sampling strategy used in each country in order to achieve the mean ages of 11.5, 13.5, and 15.5 (Roberts et al., 2007).

The HBSC survey instrument is a standard questionnaire developed by the International Research Network and used by all participating countries.

Each survey questionnaire contains a core set of questions investigating the following dimensions:

- **Background factors**: demographics and maturation, social background (family structure, socioeconomic status)
- **Individual and social resources**: body image, family support, peers, and school environment
- **Health behaviors**: physical activity, eating and dieting, smoking, alcohol use, cannabis use, sexual behavior, violence and bullying, and injuries
- **Health outcomes**: symptoms, life satisfaction, self-reported health, and Body Mass Index

Many countries also include in their questionnaire additional items that are considered of particular interest at the national level.

## Cross-References

- ▶ Adolescent Problem Behavior
- ▶ Adolescent Substance Use
- ▶ Adolescents' Life Satisfaction
- ▶ Child and Family Well-Being
- ▶ Child Health and Development
- ▶ Child Health Questionnaire (CHQ)
- ▶ Child Obesity
- ▶ Child Participation
- ▶ Child Poverty
- ▶ Child Well-Being
- ▶ Health Behavior
- ▶ Health Determinants
- ▶ Health Inequities
- ▶ Health Outcomes
- ▶ Health Promotion
- ▶ Health-Related Quality of Life Questionnaire Readability
- ▶ Health-Related Quality of Life Measures
- ▶ School Climate
- ▶ School Satisfaction
- ▶ Sex Differences

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## Health Care

▶ Life Expectancy and Subjective Well-Being

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## Health Concentration Index

▶ Measuring Socioeconomic Inequality in Health Synonyms

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## Health Condition

▶ Work Limitations

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## Health Consequences

▶ Health Outcomes

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## Health Defects

▶ Disability and Health

# Health Determinants

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## Synonyms

Determinants of health, social; Health risk conditions; Health risk factors

## Definition

The range of personal, social, economic, and environmental factors which determine the health status of individuals or populations (Nutbeam, 1998).

## Description

### Historical Context and Significance

By the 1970s, the importance of medical care as an influence on health status was beginning to be questioned (Lalonde, 1974; McKeown & Record, 1962; Whitehead, 1992). While initial responses focused on individual responsibility to engage in a healthy lifestyle, by the 1980s a growing body of research showed that the health of individuals and populations is determined by a complex set of factors. These factors became labeled as "determinants of health" and were a key component of the "population health" approach (Evans, Barer, & Marmor, 1994) that arose in the 1990s. Attention quickly became focused on the important subset of determinants that are socially produced and therefore modifiable. This resulted in the adoption of the more specific term, *social determinants of health*. In 2005, recognizing that while health status in general was improving, health inequities within and between countries were increasing, the World Health Organization (WHO) established the Commission on Social Determinants of Health (CSDH).

Current understanding of the social determinants of health has important implications for public health and health promotion practice. Since health is produced by people's circumstances and environment – factors over which they have little direct control, blaming individuals for poor health is inappropriate. Social determinants are shaped by the distribution of money, power, and resources at global, national, and local levels, which are themselves influenced by policy choices made by governments in a range of policy domains. These determinants are mostly responsible for ► health inequities, the unfair and avoidable differences in health status seen within and between countries. Health is thus inextricably linked with ► social justice and health equity has become a guiding principle of action.

### Description of Determinants

No one set of determinants has been universally adopted, but the following factors are commonly included (Public Health Agency of Canada, 2011):

- *Income and social status*: Many studies show that health status improves at each step up the income and social hierarchy. Income provides access to material resources, but even more important, social status affects health by determining the degree of control over life circumstances and, hence, capacity to take action. At a population level, societies that are reasonably prosperous and also have an equitable distribution of wealth have the healthiest populations, regardless of the amount they spend on health care. This is considered by many to be the single most important determinant.
- *Social support networks*: Tangible and emotional support from families, friends, and communities helps people deal with difficult life situations and maintain a sense of control.
- ► *Education and* ► *literacy*: Health status improves with level of education. Education equips people with knowledge and skills

for daily living, enhances their ability to participate in their community, and increases opportunities for employment.

- *Employment/working conditions*: Employment is associated with better health, especially in jobs that allow more control over work circumstances and provide safe and healthy work environments.
- *Physical environments*: Health is influenced by physical factors in the natural environment such as air, water, and soil quality, as well as factors in the human-built environment such as housing, sanitation, workplaces, and community design.
- *Personal health practices and coping skills*: Health is enhanced by engaging in positive health behaviors (e.g., eating a nutritious diet, being physical active, avoiding substance use) and coping effectively with stresses and challenges. Healthy choices and lifestyles are facilitated by supportive social environments and policies.
- *Healthy child development*: Prenatal and early childhood experiences exert a powerful influence on subsequent health, well-being, coping skills, and competence.
- *Biology and genetic endowment*: The genetic endowment of the individual, the interaction between the gene and environment to realize or negate the propensity coded in the genes, the functioning of various body systems, and the processes of development and aging, all play a role in determining health status.
- *Health services*: Access and use of services, particularly those designed to maintain and promote health and prevent disease, affect health.
- *Gender*: Biological differences in sex and the social construct of gender contribute to different health experiences for males and females.
- *Culture*: Culture affects health through customs, traditions, and beliefs of the family and community, along with racism and discrimination.

A WHO working group charged with developing a list of social determinants of health for the use of policy makers and the public (Wilkinson & Marmot, 2003) came up with a slightly different list: social gradient, stress, early life, social exclusion, work, unemployment, social support, addiction, food, and transport.

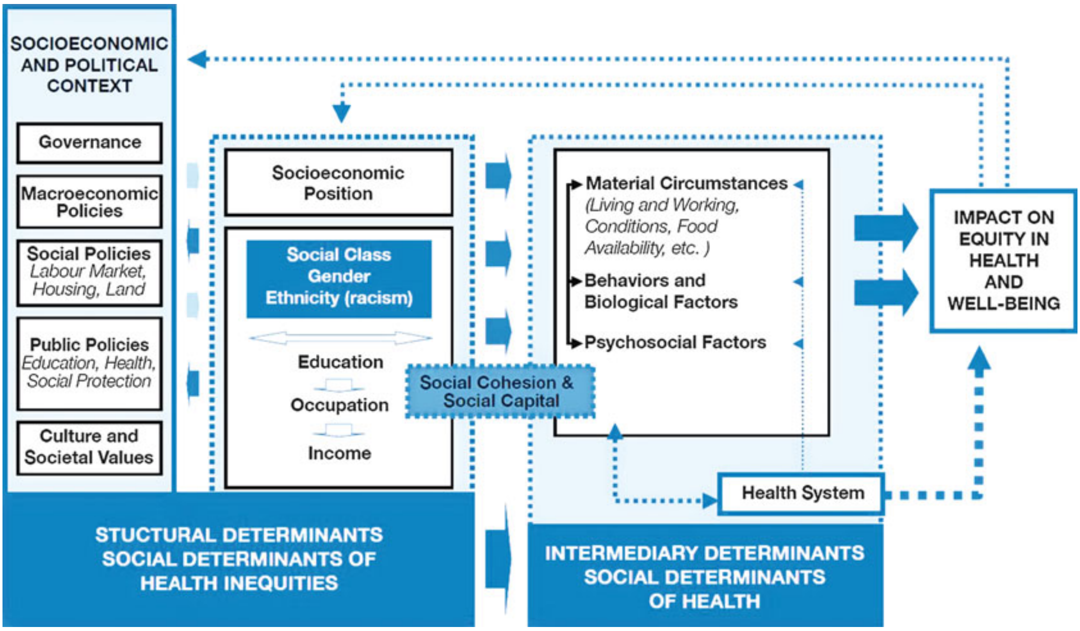
## Theoretical Models

While the simplicity of lists like these has made them popular, they fail to explain how factors interact to produce health and imply that all determinants are equally important. Many theories and models of the social production of health have been proposed. To guide the WHO Commission, a review and summary of frameworks for understanding the social determinants of health was carried out then synthesized into a single conceptual framework (Solar & Irwin, 2010) (see Fig. 1).

As it shows, social, economic, and political mechanisms result in populations being stratified according to income, education, occupation, gender, race/ethnicity, and other factors; these socioeconomic positions in turn shape intermediary determinants of health status (material circumstances, psychosocial circumstances, behavioral and biological factors, and the health system), which cause individuals to experience differential exposure and vulnerability to health-compromising conditions.

## Acting on the Determinants

Reducing inequities and improving overall health status require acting on the social determinants of health. The field of ► health promotion, defined as the process of enabling people to increase control over the determinants of health and thereby improve their health (Nutbeam, 1998), is primarily concerned with such action. The Ottawa Charter for Health Promotion (1986), a seminal document developed in 1986 and still used today, identifies five priority action areas: (1) build healthy public policy (putting health on the agenda of policy makers in all sectors and at all levels); (2) create supportive environments for health (physical, social, economic, and political); (3) strengthen community action for health (ownership and control of their own endeavors and destinies); (4) develop personal skills to enable more control over one's own health and environments, and to make choices conducive to



**Health Determinants, Fig. 1** CSDH conceptual framework (Solar & Irwin, 2010)

health; and (5) reorient health services beyond the provision of curative and clinical services to health promotion, with more resources for research and training. These strategies are the mechanisms of action through which the determinants of health can be addressed.

In terms of strategic areas for action, the WHO Commission's final report (Commission on Social Determinants of Health [CSDH], 2008) contains three overarching recommendations:

1. *Improve daily living conditions* by promoting healthy child development, free primary and secondary education, safe housing, clean water and sanitation, economic and social policy responses to climate change and other environmental degradation, fair employment and decent work, social protection policies and programs throughout life, and universal health care
2. *Tackle the inequitable distribution of power*, *money*, *and resources* through such measures as progressive taxation, increasing global aid, strengthening of public sector leadership, legislation around gender equity, ensuring all groups in society have fair representation in decision-making, and increased attention to health equity by governments and the UN
3. *Measure and understand the problem and assess the impact of action by* establishment of basic data systems, including vital registration and routine monitoring of health inequity and the social determinants of health, to support the development of effective policies, systems, and programs, along with education and training for relevant professionals

## Cross-References

► Empowerment
► Environment and Health
► Food Security
► Gender and Health
► Health Inequities
► Health Promotion
► Level of Education
► Minimum Wages
► National Well-being Indicators
► Occupational Health
► Psychological Empowerment
► Public Health
► Sense of Coherence
► Sense of Community

- ▶ Social Health
- ▶ Social Integration
- ▶ Social Interaction
- ▶ Social Justice
- ▶ Social Policy
- ▶ Social Support
- ▶ Socioeconomic Determinants of Health
- ▶ Stress
- ▶ Unemployment
- ▶ Wellness
- ▶ Women's Empowerment
- ▶ Work and Employment, Quality of

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# Health Differences

- ▶ Minority Health

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# Health Disparities

- ▶ Health Inequities
- ▶ Minority Health

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# Health Expectancy

- ▶ Healthy Life Expectancy at Birth

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# Health Geography

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## Synonyms

Medical geography

## Definition

*Geography* is the study of the Earth as the home of human kind. *Health geography* is the study of the distribution, diffusion, determinants, and delivery associated with health and health systems in human populations. The unique aspect of examining health and health systems from a geographic perspective is the use of a spatial lens that allows for investigation across of a range of scales, from the local (e.g., neighborhood) to the global.

## Description

Your ▶ health depends upon a lot of factors: genetics, access to health-care facilities, whether or not you ▶ exercise, how many fruits and vegetables you eat, and so on. But there is another very important determinant of health often ignored, and that is *where we live*. We occupy different locations in the world, and in the course of our everyday lives, we move from place to place (the place that we live, the place where we work/go to school, the places we recreate), and these places have a substantial impact on our health. For example, if we live in a neighborhood characterized by low socioeconomic status, the likelihood is that neighborhood does not provide us with healthy amenities like access to fresh food stores or sites for physical activity and it likely shares characteristics that will harm our health, such as lack of access to health-care facilities (e.g., physicians are much less likely to locate in low-income neighborhoods), exposure to environmental pollution, and higher ► crime rates. This is just one example. Think too about other, different spaces such as urban versus rural locations where, for example, access to home care facilities for an aging population are much more difficult to access in rural areas than in urban areas (Cloutier-Fisher & Skinner, 2006; Farmer, Phillip, King, Farrington, & MacLeod, 2010). In short, our "health" and our "geographies" are inextricably linked. If you live on a busy main road, very close to a source of electromagnetic radiation, or near a site disposing of hazardous waste, you may be more at risk of illness than others who do not. Where you live affects your risk of disease or ill-health and therefore your well-being. These relationships are complicated further if you experience any type of disability or other vulnerability (e.g., being poor, a person of color), and typically, access to resources to enhance health and well-being is greatly hindered by these personal characteristics.

The history of what is often referred to as *medical* geography is well documented and need not be repeated here (see, e.g., Gatrell & Elliott, 2009). We should, however, set the stage for the role of geographers in health research in the present day. This is the result of a tripartite set of factors: the evolution of models and definitions of health, the evolution of *medical* to *health* geography, and the rise of the *population health perspective*. The evolution of health from more than simply the absence of disease to complete physical, social, and emotional well-being (World Health Organization, 1957) set the stage for a revisiting of the biomedical paradigm and for the development of models of health and well-being that emphasized not only multiple ► determinants of health but the role of the social, cultural, political, and economic environments within which health and well-being are shaped. Alternative health frameworks (i.e., Epp, 1986; Lalonde, 1974) began to emphasize the role of socio-environmental factors, in addition to lifestyle and biology, in the production of health and illness, while at the same time diminishing the role of resources for everyday living that allow individuals to manage, cope with, and even change their environments (World Health Organization, 1986).

Somewhere around the late 1980s, medical geographers began to explore their own role in research, relative to these evolving models and definitions of health. In the Canadian context, this took the form of lengthy but friendly debates culminating in 1993 with a formal name change from *medical* to *health* geography. Our British counterparts soon followed suit, whereas our US colleagues merged the terms into "health and medical" geography, implying a difference. Indeed, the focus is a broadening of medical geography to include broader definitions and determinants of health, inclusive of our disease ecology colleagues (i.e., those interested in mapping the distribution and diffusion of disease and ill-health) and extending to our social theory colleagues. That is, concomitant with this shift from medical to health geographies is a shift from quantitative and/or positivist approaches to knowing to more theoretically informed qualitative approaches. That is, explorations of the *meaning* of health and illness in place require an alternative epistemology, one that recognizes individual and situated experiences as a valid way of knowing. The take-home message from this work is that health and illness are socially constructed *in place*.

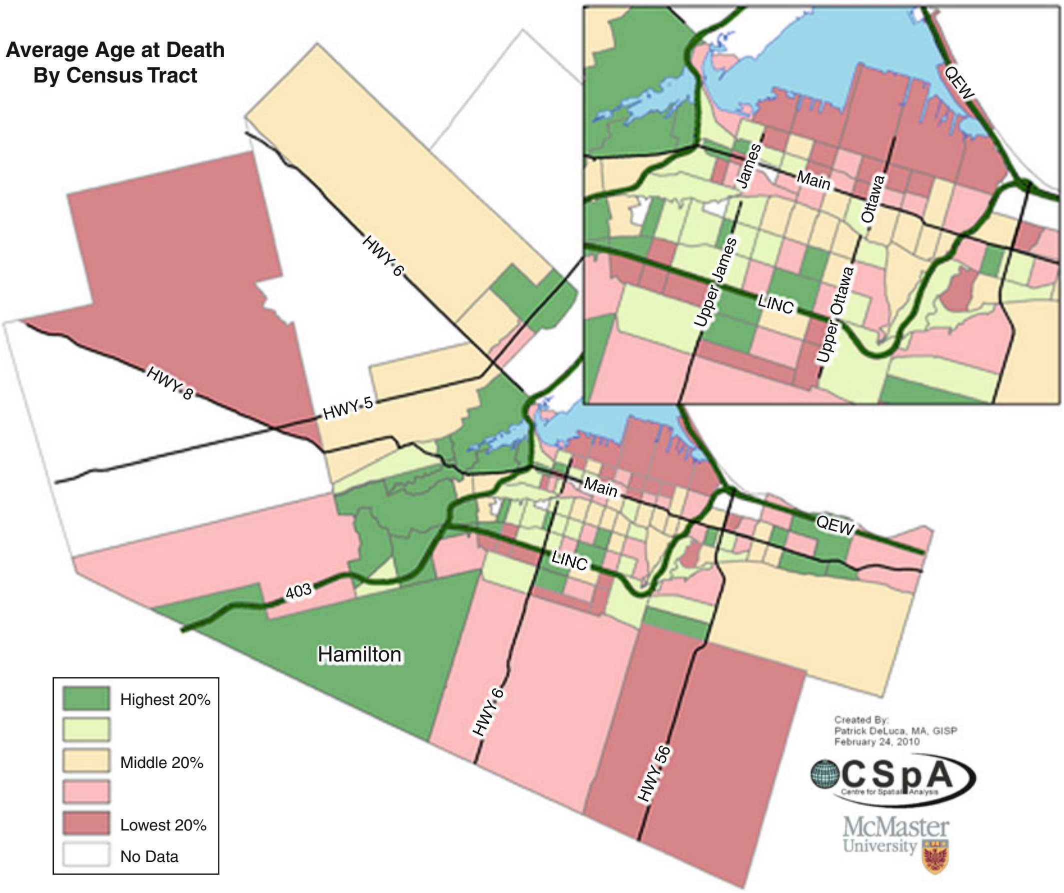
Within the broader health research community, at around the same time, we saw increasing empirical support for a population-based framework for understanding the broader determinants of health (the classic here is Evans, Barer, & Marmor, 1994). That is, there was increasing recognition of the decreasing roles of biomedicine as well as the formal health-care system in the production of health and illness, while the importance of socio-environmental factors and their interactions with individual-level biological and behavioral variables took on increasing importance. These notions are codified in the population health perspective. Although not without its critics (Hayes, Foster, & Foster, 1994; Richmond & Ross, 2009), it has become the guiding framework for much health and health promotion policy and a strong precursor to the social determinants of health movement (e.g., Marmot, 2005). This framework was embraced by health geographers, and questions of the intersection of individual-level biological and behavioral variables with social and environmental factors are central to the health geographers' research agenda.

In undertaking this research, health geographers apply a range of theories (e.g., social constructionism, ▶ feminist theory, structuration theory) and methods (quantitative, qualitative, ▶ spatial analysis, geographic information systems [▶ GIS]) to a range of issues (e.g., environmental exposures, infectious and chronic diseases, health-care delivery). These are illustrated in the examples that follow.

(Health) geographers are classically known for studies that employ disease ecology approaches; for example, mapping the distribution of diseases, as well as their diffusion, like measles in Iceland (Cliff & Haggett, 1993). With the introduction of GIS, this type of analysis attained a certain sophistication; for an example, see the work of Peter Gould (1993) on the diffusion of HIV-AIDS in the USA in the 1980s. The simple act of mapping disease or ill-health paints a powerful picture of a situation or health issue and is a very accessible tool for policy makers. For example, examine the following illustration that maps average age at death by census tract in an industrial city in northeast North America (see Fig. 1). Now compare it to the second map of the percentage of the population living below the poverty line (see Fig. 2). Contrasting these maps leads to the generation of hypotheses and has influenced a new line of policy development in this city with a population of about half a million people.

Spatial analytic tools also allow us to explore the relative contribution of area-level characteristics to the distribution of a health problem. For example, given the epidemic of chronic diseases in North America, Harrington and Elliott (2009) wanted to understand the distribution of related risk factors in Ontario, Canada. While most research to this point had explored the role of individual risk factors (i.e., smoking, physical inactivity, nutrition), these health geographers were particularly interested in the role of area-level factors affecting this distribution, so they looked at ecological-level variables (e.g., percentage of low-income families per census tract, percentage of dwellings in need of major repair, unemployment rates) using multilevel modeling to allow for the simultaneous estimation of individual- and ecological-level independent variables. In the end, these researchers found that 7 % of the overall variance was due to ecological-level variables, quite a bit from a population health perspective! In another example from the burgeoning area of obesity research, Pouliou and Elliott (2009) followed a similar protocol to explore the role of neighborhood-level determinants of overweight and obesity and found similar results based on variables related to ▶ population density, land use mix, and road network characteristics. While these quantitative spatial analyses will tell us *what* is going on, they do not give us a sense of the "how" and "why" – that is the realm of qualitative exploration. For example, Asanin-Dean and Elliott (2012) have begun to explore the meaning of neighborhood for low-income overweight teens.

Not all health geographers put diseases on a map or undertake quantitative spatial analytic investigations. Many employ humanistic, social constructionist approaches to health. For example,Dyck (1995) is well known for her exploration of the meanings of health and illness for women diagnosed with chronic diseases, such as multiple sclerosis. Haalboom, Elliott, Eyles, and Muggah (2006) used qualitative interviewing to

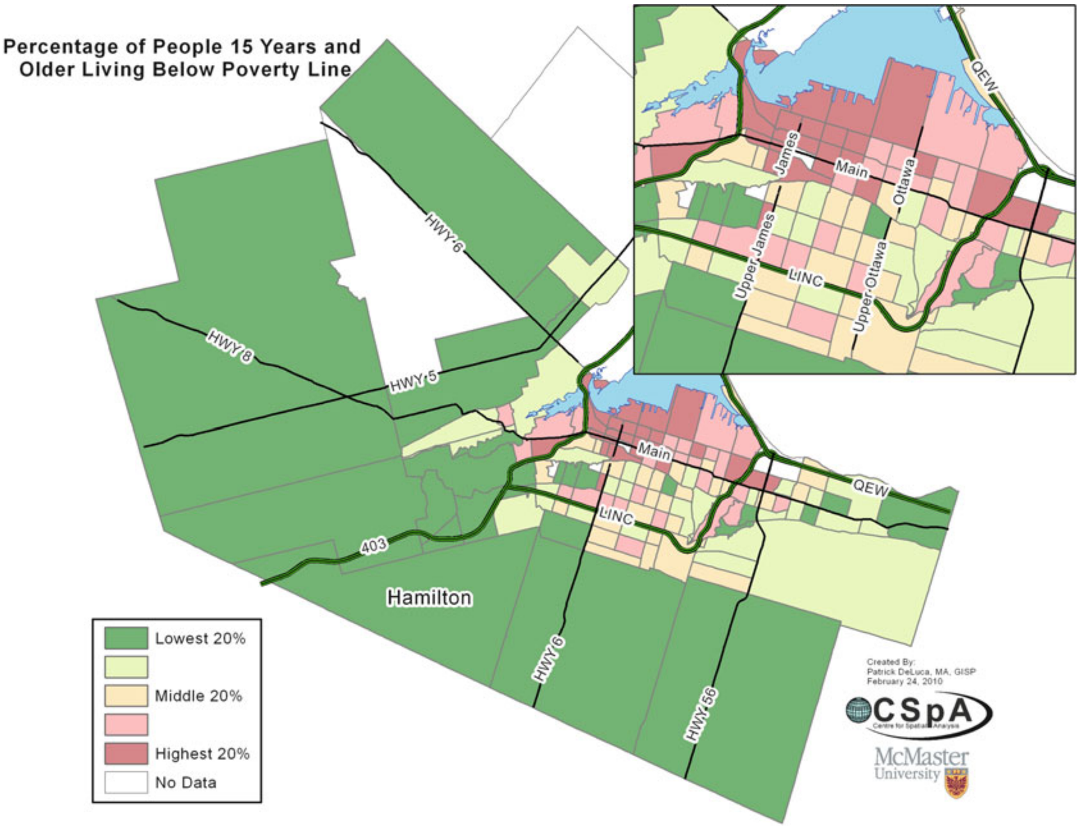


**Health Geography, Fig. 1** Average age at death by census tract

explore the perceptions and meanings of environmental exposures in the Sydney Tar Ponds of Sydney, Nova Scotia, Canada.

While geographers have clearly made a substantial contribution to understanding the determinants of health and the experiences of illness, they have also made a substantial contribution to understanding the distribution and delivery of health-care services. For example, Apparicio, Abdelmajid, Rive, and Shearmur (2008) used geographic analysis to design optimal location for an urban population in the southern USA. Berke (2010) used geographic information systems to assess the importance of place in primary care research and practice such that he suggests when physicians provide health advice to their patients (e.g., to engage in more physical activity, improve their diet), they must do so in the context of the habitat in which they live (i.e., access to affordable supplies of fresh foods, access to amenities for physical activity). Geographers have also used spatial analytic approaches to explore the impact of access on vulnerable populations. For example, French et al. (2008) examined inequalities in access to radiation therapy in British Columbia, Canada, revealing substantial and significant differences in both referral and utilization rates. Bailey et al. (2011) also used geographic information systems to develop an optimal model for the emergency referral system for maternal and newborn health in Ethiopia.

In sum, geographers employ a range of models, theories, and methods to understand the various aspects of the distribution, diffusion, determinants, and delivery of health and health



**Health Geography, Fig. 2** Percentage of people 15 years and older living below poverty line

care, sometimes with a particular emphasis on those most vulnerable. Like the majority of social scientists working in the area of health research, health geographers work hard to link their science with policy in order to have an impact and affect change.

## Cross-References

- ▶ Crime
- ▶ Determinants of Health
- ▶ Exercise
- ▶ Feminist Theory
- ▶ Geographic Information Systems (GIS)
- ▶ Health
- ▶ Health Care
- ▶ Population Density
- ▶ Spatial Analysis

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## Health Impact

► Health Outcomes

## Health Inequalities

► Health Inequities

## Health Inequities

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### Synonyms

Health disparities; Health inequalities

### Definition

Potentially avoidable differences in health (or in health risks that policy can influence) between groups of people who are more and less advantaged socially; these differences systematically place socially disadvantaged groups at further disadvantage on health (Braveman, 2006).

### Description

#### Terminology

The terms *health inequalities, health inequities*, and *health disparities* are all used to refer to differences in health related to social disadvantage. *Disparities* is most often used in the United States and, until recently, was predominantly used to describe differences between racial/ethnic groups; in other countries, the terms *inequalities* or *inequities* are preferred.

Some have argued that *inequality* – a simple difference in health status – should be distinguished from *inequity*, which implies a difference that is unjust. However, usage has been inconsistent, and this distinction is not always made. While numerous papers have been written on the differences between the three terms in their precise meaning (e.g., Braveman, 2006; Carter-Pokras, & Baquet, 2002; Kawachi, Subramanian, & Almeida-Filho, 2002), their application and implications for measurement and action, in practice they are converging. This entry uses *health inequities* as defined above. While social disadvantage may be related to many characteristics, such as gender, race/ethnicity, and geography, most research and policy to date has focused on disadvantage stemming from socioeconomic position.

## Measurement

Understanding of inequities may be significantly affected not only by the definition of terms but also by the way they are measured. Two different approaches are used: health differences between population groups (more commonly used in demography, sociology, and epidemiology) and the health distribution across individuals (used more in economics). The first requires defining social groups that are believed to reflect differential access to resources and life opportunities (e.g., social class, race), while the second avoids the many difficulties involved in defining such groupings. Kawachi et al. (2002) conclude that the two approaches produce complementary, not contradictory, data but that analyzing differences between groups is essential to understanding health inequities rather than simply health differences.

Several measures of each type have been proposed, each with its own strengths and limitations (see Anand, Diderichsen, Evans, Shkolnikov, & Wirth, 2001, for a review). For example, the simplest intergroup measure, comparing the health status of the top and bottom groups, is easy for policy makers and the public to understand but is less informative than more sophisticated measures which express inequality in health across the whole socioeconomic spectrum. The most fundamental challenge in measuring health inequities is the need for linked data on health and socioeconomic variables, which is often not available, especially in countries with the poorest health.

## Historical Context

The current interest in reducing health inequities can be traced back to 1977, when the Thirtieth World Health Assembly sets as its target the attainment of a level of health by 2000 that would permit all people to lead a socially and economically productive life, referred to as “Health for all by the Year 2000” (World Health Organization, 1981). The following year, the Joint WHO/UNICEF International Conference in Alma-Ata, USSR, adopted a Declaration on Primary Health Care as the key to meeting this target, which included this statement, “The existing gross inequality in the health status of the people, particularly between developed and developing countries as well as within countries, is politically, socially, and economically unacceptable and is, therefore, of common concern to all countries” (World Health Organization, 1978).

In 1980, the Department of Health and Social Security in the UK released the report of an expert committee into health inequality, the Black Report, which demonstrated that although overall health had improved since the introduction of National Health Service in 1948, health inequalities related to social class, gender, and other factors had increased (Black, 1980). This was followed by increased attention to inequities in other countries (e.g., Epp, 1986). Subsequent reports in the UK (Department of Health (Acheson Report), 1998; Whitehead, 1992) revealed that inequities were persisting and even growing.

However, the political nature of health inequities has hampered action to address them. Despite extensive evidence, their very existence has been questioned, as has the relationship between social conditions and health (Bartley, Blane, & Smith, 1998). At the same time that research was finding out more and more about the nature and extent of health inequities, many countries were shifting away from social democracy to free market economics, and despite the many reports released, little action has been taken to address inequities. Even within the WHO, the focus on inequities wavered toward the end of the twentieth century (Braveman, 2006). However, the WHO's establishment of the Commission on the Social Determinants of Health (CSDH), whose final report was released in 2008, signaled the start of a new era in understanding and reducing inequities (Commission on the Social Determinants of Health, 2008).

## Significance

The documentation of substantial differences in health status (across a variety of measures, from self-rated health to mortality) in developed countries challenged the assumptions that life was improving for all citizens and that providing a social safety net, including universal health care, would reduce the impact of poverty on health. Particularly surprising was the finding that health inequities do not exist simply between those in poverty and everyone else, but rather, at each step down the socioeconomic spectrum, health grows poorer. The *socioeconomic gradient in health* refers to the worse health of those who are at a lower level of socioeconomic position – whether measured by income, occupation, or educational attainment – even among those in relatively high socioeconomic groups. Thus, the material conditions associated with severe disadvantage (such as lack of access to food, housing, and medical care) are insufficient to explain socioeconomic health inequities (Kawachi, 2006). A growing body of research documents the contribution of lack of autonomy and social engagement not only to inequities within countries but also between countries (Marmot, 2006).

Substantial social inequities in mortality have been found in most, if not all, western European countries (for a review, see Mackenbach, Bakker, Kunst, & Diderichsen, 2002) and other developed countries (e.g., Raphael, 2000; Singh & Siahpush, 2006). The excess in mortality rate in lower socioeconomic groups is often 25–50 % or higher than in the upper socioeconomic groups. These inequities tend to be greater among men than among women, and they start early in life and continue into old age. A social gradient is found for almost all common diseases and injuries, and thus social inequities are seen as one of the most fundamental health determinants (Whitehead & Dahlgren, 2006b). Less data is available for developing countries, but the research that has been done confirms the existence of social gradients in these nations as well (Marmot, 2006). Inequities within and between countries are generally widening with time (Marmot, 2006).

Research examining the impact of socioeconomic gradients across developed countries has found that the shallower the gradient, the better the mean health status of the population. The difference in equity of income and resource distribution – *not* per capita income – is one of the principal determinants of differing health status among wealthy societies. Countries with highly unequal income distributions have poorer health status than those with more equitable income distributions (Wilkinson & Pickett, 2010).

Health has been recognized as a human right in the WHO constitution, numerous international and regional human rights treaties, and national constitutions all over the world. Moreover, good health is necessary for individuals to be and do what they choose, which is the essence of social justice (Sen, 2000). A just society therefore requires equal access to the resources and opportunities for health for all its members. Health inequities reflect a fundamental injustice in the way human affairs are organized (Daniels, Kennedy, & Kawachi, 1999). The impact of inequity on society goes beyond health, influencing levels of education, personal safety, trust, and even climate change (Wilkinson & Pickett, 2010).

## Determinants

Reducing health inequities in a particular country or region requires understanding their determinants, which may not be the same as the determinants of health for the whole population. Five general mechanisms produce health inequities (Whitehead & Dahlgren, 2006b):

1. *Different levels of power and resources:* Social position in itself is a determinant of health

inequities, through two main pathways: access to the material resources required for a healthy life and control over life circumstances.

2. *Different levels of exposure to health hazards:* Exposure to almost all risk factors (material, psychosocial, and behavioral) is inversely related to social position. Conversely, people with the greatest access to resources have the best opportunities of avoiding risks, diseases, and the negative consequences of poor health.
3. *The same level of exposure leading to differential impact:* Research has found that some health risks, e.g., alcohol consumption, may have a more detrimental impact on socially disadvantaged individuals. Furthermore, disadvantaged groups are more likely to be exposed simultaneously to several risk factors that reinforce each other, e.g., chronic stress, social exclusion, low income, poor nutrition, and alcohol consumption.
4. *Life-course effect:* Many events early in life lead to poor health later on; material circumstances in early life can be a better predictor of health status later in life than social position in adulthood. The life-course perspective recognizes that health is the cumulative outcome of all the pathways interacting over a lifetime.
5. *Different social and economic effects of being sick:* Poor health itself has negative consequences, such as loss of earnings from employment, additional financial stress due to health care and medication expenses, and social isolation or exclusion resulting from unemployment or activity restrictions. All of these will tend to have a greater impact on those who are disadvantaged to begin with.

## Approaches to Reducing Inequities

Once the specific determinants of health inequities in a region are understood, efforts to address these determinants may focus on (1) targeted programs for disadvantaged populations, (2) closing health gaps between worse-off and better-off groups, or (3) addressing the social health gradient across the whole population. While the third tactic is most consistent with an equity-based approach, it cannot be isolated from the other two, as reduced differences can technically be achieved by reducing the health divide between middle and higher socioeconomic groups, while neglecting people in poverty and leaving their health even further behind (Whitehead & Dahlgren, 2006a). Thus, all three approaches should be used to complement each other. Similarly, the goal of reducing health inequities should not be seen as competing with improving overall population health; it is increasingly recognized that attention must be paid to the health of those worst off in order to meet national heath targets for the population as a whole.

In response to the CSDH report, the 2009 World Health Assembly urged Member States, through its resolution WHA62.14 (Reducing health inequities through action on the social determinants of health), to tackle health inequities within and across countries through political commitment, with the aim of "closing the gap in a generation." Other recommendations included taking health equity into account in all national policies that address social determinants of health, contributing to the empowerment of marginalized individuals and groups and improving research capacity in order to measure and monitor inequities in health status.

## Research Gaps

Whitehead and Dahlgren (2006b) make the following recommendations for future research on health inequities:

- Increase understanding of the precise mechanisms by which determinants of health generate inequities in health, as distinct from the determinants of health for the general population.
- Identify pathways through which social differences in living standards are linked to psychosocial determinants of health, which in turn cause health problems, e.g., through chronic stress.
- Examine synergetic effects of different risk factors, especially among low-income groups, using longitudinal cohort studies.
- Disseminate information on the determinants of health inequities in ways that people

without a background in epidemiology or public health can understand.

- Refine methods of health impact assessment to capture positive and negative health impacts of policies by age, sex, and social position.
- Endeavor to assess the lead time (the period between change in exposure and health impact) to avoid missing key effects due to a too short time frame.

However, Whitehead and Dahlgren conclude that while further research is essential, enough is presently known for effective action and that preventive and protective action cannot be delayed.

## Cross-References

▶ Beliefs About Poverty
▶ Equity
▶ Equity Theory
▶ Health Determinants
▶ Income Distribution
▶ Income Redistribution
▶ Low Income
▶ Minimum Wages
▶ Poverty
▶ Poverty Lines
▶ Poverty Measurement
▶ Social Inequalities
▶ Social Justice
▶ Social Policy
▶ Social Progress
▶ Social Stratification
▶ Socioeconomic Determinants of Health
▶ Wealth Taxes
▶ Women's Well-being
▶ Working Poor

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# Health Outcomes

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## Synonyms

Health consequences; Health impact

## Definition

Health outcomes refer to the health consequences brought about by the treatment of a health condition or as a result of an interaction with the healthcare system. It is a multidimensional concept that can be studied on multiple levels.

## Description

### Conceptual and Measurement Issues

Health is a broad concept, defined by the World Health Organization as "a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity" (WHO, 1946). Accordingly, health outcomes encompass a wide range of health-related consequences of healthcare interventions and healthcare programs. The New South Wales Health Department in Australia defined health outcomes as "change in the health of an individual, group of people or population which is attributable to an intervention or series of interventions" (Frommer, Rubin, & Lyle, 1992), highlighting "change in health status" as the focus of analysis.

In the literature, different domains of health outcomes have been examined, and each domain can be studied on different levels. The most common forms of health outcomes examined are physical health outcomes, mental health outcomes, ▶ disability, general well-being, and ▶ health-related quality of life (HRQoL). For each dimension, the outcomes could be assessed on the individual patient or patient groups or at macro (e.g., country) levels.

The most fundamental physical outcomes are mortality and morbidity. At the extreme end, the most negative outcome is mortality or ▶ death which can reflect the failure of a therapeutic intervention. Death was the health outcome which Florence Nightingale studied during the Crimean War as a pioneer of health outcome study (Nightingale, 1871). She examined death as an outcome with respect to wounds, infection, and nursing care. Mortality rates associated with different interventions for a specific group of patients with a certain disorder could be compared to determine the relative efficacy of different interventions. For example, Gaede, Lund-Andersen, Parving, and Pedersen (2008) conducted a randomized trial to compare the mortality rates among patients with type 2 diabetes mellitus and persistent microalbuminuria receiving two different forms of intervention. They demonstrated that intensive multifactorial intervention incorporating tight glucose regulation and use of multiple medication and behavior modification was superior to conventional diabetic intervention in reducing both all-cause mortality and mortality from cardiovascular causes. Mortality rates may also be compared across different countries as an indicator of the performance of the countries' healthcare system. Luxembourg and San Marino ranked the highest with the lowest infant mortality rate of 1 per 1,000 live births in the WHO World Health Statistics 2011, based on data obtained in 2009. The United Nations Population Division used 5-year averages in infant mortality rates from 2005 to 2010 as the measure and ranked Singapore the first with the lowest reported infant mortality rate of 1.92 deaths per 1,000 live births (United Nations, Social Affairs, & Population Division, 2011). Health outcomes of countries can also be compared in terms of ► life expectancy. According to statistics compiled by the WHO, Japan and San Marino had the highest life expectancy at birth (both being 83 years) in 2009 (WHO, 2011). Morbidity is another physical health outcome that is commonly studied as an indicator of healthcare intervention or healthcare system performance. On a macro level, healthcare systems aim to keep morbidity of various disorders defined in terms of incidence or prevalence rates to a minimum. Therapeutic interventions also aim to reduce individual patients' morbidity state by eliminating symptoms, reducing symptom severity, and minimizing recurrence. Another outcome which could be quantified and compared is number of healthcare visits. Apart from negative outcomes, one can also examine positive physical health outcomes of healthcare interventions which may include return to health, reduction of symptom severity, and reduction of pain and ► distress associated with an illness.

Illness and its treatment can bring about substantial mental health outcomes. It is well documented that physical illnesses are associated with adverse mental health outcomes. Cancer, heart diseases, chronic obstructive pulmonary disease, and transplant patients, among others, have been reported to be predisposed to depression and anxiety (Steinhauser et al., 2011). A recent ► meta-analysis of 332 studies also concluded that children and adolescents with physical illnesses had elevated anxiety symptoms, with those suffering from ► chronic fatigue syndrome, migraine or tension headaches, sensory impairment, and epilepsy at particularly increased risk (Pinquart & Shen, 2011a). The same team of researchers also found that levels of depressive symptoms were higher among children and adolescents with physical illnesses, especially those with chronic fatigue syndrome, fibromyalgia, cleft lip and palate, migraine or tension headache, and epilepsy (Pinquart & Shen, 2011b). In recent years, there has been increasing attention on developing psychological interventions targeted at reducing psychological distress associated with physical illnesses and their treatment (e.g., Lee, Ho, & Chan, 2010; Tatrow & Montgomery, 2006). There are different self-report psychological instruments available for assessing mental health outcomes. The Beck Anxiety Inventory (BAI, Beck & Steer, 1990; Spielberger et al., 1970) and State Trait Anxiety Inventory are commonly used in assessing ► anxiety symptoms. For depressive symptoms, the most commonly used measures include the ► Center for Epidemiological Studies of Depression (CES-D; Radloff, 1977), ► Beck Depression Inventory II (BDI II, Beck, Steer, & Brown, 1996), and the depression module of the PRIME-MD Patient Health Questionnaire (PHQ-9; Spitzer et al., 1994). A particularly useful tool for assessing anxiety and depression in the medical population is the ► Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983). The HADS is a 14-item measure with separate subscales for measuring anxiety and depression which focuses on the emotional symptoms of anxiety and depression and excludes somatic manifestation of the problems, such as ► fatigue and muscle tension.

Disability or functional impairment is increasingly recognized as an important health outcome. Illness brings about disability and impairment in different life domains, including occupational functioning, social and interpersonal functioning, self-care, and restrictions on activities of daily living. A measure of the burden of disease that takes into account both life expectancy and disability is disability-adjusted life year (DALY). It refers to the number of life years lost due to illness, disability, or death, hence combining the notions of mortality and morbidity. Healthcare interventions should target at reducing disability and improving the functional status of patients, in addition to relieving symptoms and ameliorating the emotional impact of illnesses. Functional improvement and disability reduction are in turn important determinants of quality of life.

The concept of quality of life as a core health outcome is based on the idea that illnesses and interventions can impact on the quality of one's life, in addition to the length of life or mortality.

The adverse physical and mental health outcomes of illness can also contribute to reduced quality of life. Quality of life is a broad construct, and one specific dimension of it that is particularly relevant as a health outcome is health-related quality of life (HRQol). Different studies have quantified the HRQoL associated with different illnesses, and interventions are increasingly evaluated in terms of their efficacy in improving the HRQol of patients. Validated self-report instruments are available for assessing HRQol. Broadly speaking, they can be categorized into generic measures and disease-specific measures. One of the most commonly used and well-validated generic measure is the Short Form Health Survey-36 (Ware, Snow, Kosinski, & Gandek, 1993), now in its second version (SF-36v2; Ware, Kosinski, & Dewey, 2000). It consists of 36 items grouped into two summary measures (the physical health summary measure and the mental health summary measure) encompassing 8 scales, namely, physical functioning, physical role functioning, bodily pain, general health, vitality, social role functioning, emotional role functioning, and mental health. The SF-36 has been widely used as a health outcome measure of numerous diseases, ranging from arthritis to back pain, cancer, cardiovascular disease, depression, and sleep disorders (Turner-Bowker et al., 2002). A shorter 12-item version (▶ SF-12; Ware, Kosinski, Turner-Bowker, & Gandek, 2002) is available, with similarly robust psychometric properties. Disease-specific measures assess the HRQol among patients with particular diseases, taking into account the specific effects of special medical conditions and their treatment. Examples include the ▶ Functional Assessment of Cancer Therapy Scales-General (FACT-G; Cella et al., 1993) and ▶ EORTC QLQ-C30 (Aaronson et al., 1993) for cancer patients and the ▶ Asthma Quality of Life Questionnaire (AQLQ) for patients with asthma (Juniper et al., 1992).

Recent years have seen a surge of interest in quantifying and comparing the cost-effectiveness of different interventions. In this connection, the concept of quality-adjusted life year (QALY) is particularly useful. QALY incorporates both quality and quantity (length) of life in measuring disease burden, hence taking into account both health-related quality of life and life expectancy. Its value can range from 1 (representing an additional year in perfect health) to 0 (death), but theoretically, it can have negative values for health states that are perceived as worse than death. QALY is commonly used to assess the value of an intervention and is a useful tool in decisions on healthcare resources allocation.

### Health Outcome Research

Health outcome research emerged as a field to systematically evaluate the end results of healthcare services (Clancy & Eisenberg, 1988). It aims at quantifying and analyzing different dimensions of impact of diseases, intervention, healthcare services, health promotion programs, and healthcare systems. Health outcome research as a field of study could be traced back to Florence Nightingale's study of the health outcomes of wound and infection during the Crimean War (Nightingale, 1871). However, it was not until the early 1900s that such research was conducted in a more systematic manner, when Codman, an orthopedic surgeon in Boston, proposed the "end-result idea" and advocated that patients should be followed up long enough such that the results of the treatments received by patients could be documented and that such data should be systematically recorded for comparisons across institutions (Codman, Mayo, Clark, & Chipman, 1913). The health outcome research paradigm was even more fully elaborated by Donabedian, a renowned public health professor who articulated in a classic paper in 1966 that health quality assessment consists of three aspects, namely, outcome, process, and structure (Donabedianm, 1966). Health outcome research goes beyond hard facts such as mortality data to include "patients' experiences, preferences and values," as stipulated by Clancy and Eisenberg (1988). Nowadays, health outcome research is an important field that provides scientific evidence to guide healthcare policies and to drive improvement in healthcare provisions.

An emerging area in the systematic evaluation of health outcomes is Health Impact Assessment (HIA). According to the World Health

Organization, HIA is “a means of assessing the health impacts of policies, plans and projects in diverse economic sectors” (WHO, 2011). It is more macro in scope and considers the health impact of policies in diverse sectors in the society, including those involving transport, air pollution, and waste management. It provides scientific evidence that guides policy formulation and decision-making.

### Future Directions

Health outcome is an important area in quality of life research. It has conventionally been studied as end results of healthcare interventions or as indicators of the performance of healthcare systems. However, it should be recognized that other health-related factors could also have health outcomes. These include, among others, lifestyle factors and social conditions. Lifestyle factors such as dietary habits, ▶ physical activity patterns, and stress can have substantial impact on health, leading to physical and mental health outcomes as well as affecting quality of life. Social conditions, including poverty, violence, gender inequality, and abuse, to name a few, could also lead to different adverse health outcomes. It would be fruitful to extend the study of health outcomes to systematically examine the effects of these on health. Other than examining the outcomes of interventions, lifestyle, and social factors on hard endpoints of health such as disease, injury, and mortality, it would also be beneficial to examine their impact on health risk factors such as weight, lipid profile, blood pressure, waist/hip ratio, and cortisol levels, all of which being documented as associated with adverse physical and mental health outcomes.

It is also worth noting that there could be potentially different accounts on health outcomes and QoL from different parties involved in a healthcare encounter. For example, in a study of children with specific learning disabilities, it was found that children’s ratings of their own everyday functioning in school were higher than the mothers’ ratings, while they tended to rate their physical and emotional well-being lower than what their mothers’ ratings were (Rotsika et al., 2011). There is a need to develop multidimensional models of QoL that take into account the QoL impact of a certain health condition. To take an even further step, it should be recognized that there are family level outcomes and needs that should be systematically measured and addressed. Some researchers have proposed the concept of ▶ family quality of life (e.g., Poston et al., 2003) and embarked on the development and validation of tools for assessing family quality of life in families caring for children with developmental disabilities (Poston et al., 2003; Summers et al., 2005) and patients with dementia (Ducharme & Geldmacher, 2011). However, there is a dearth of studies and instruments for assessing family quality of life in other disease conditions. Future studies should aim at assessing QoL and other health outcomes among different informants in a health encounter as well as on a family level to determine the outcome of a health condition or intervention from multiple perspectives and levels.

## Cross-References

- ▶ Anxiety
- ▶ Asthma Quality of Life Questionnaire
- ▶ Beck Depression Inventory
- ▶ Center for Epidemiologic Studies Depression (CES-D) Scale
- ▶ Chronic Fatigue Syndrome
- ▶ Chronic Obstructive Pulmonary Disease (COPD)
- ▶ Death
- ▶ Disability
- ▶ Disability-Adjusted Life Years (DALY)
- ▶ Disease-Specific Measure
- ▶ Distress
- ▶ EORTC QLQ-C30
- ▶ Family Quality of Life
- ▶ Fatigue
- ▶ Functional Assessment of Cancer Therapy (FACT)
- ▶ Gender Inequality Index
- ▶ Health
- ▶ Health-Related Quality of Life
- ▶ Hospital Anxiety and Depression Scale (HADS)

- ▶ Meta-Analysis
- ▶ Mortality
- ▶ Physical Activity
- ▶ Poverty
- ▶ Quality Adjusted Life Years (QALY)
- ▶ SF-36
- ▶ State-Trait Anxiety Inventory
- ▶ Violence

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## Health Preservation

▶ Chinese Medicine and Yang Sheng

## Health Promotion

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### Synonyms

Healthiness encouragement; Well-being adolescents; Well-being, sponsorship

### Definition

Adolescence is the period of transition in the human life cycle; approximately half of the world's population is under 25 years of age. Adolescent "well-being" is defined by the presence of physical, mental, economic, and environmental health as well as by having parents or guardians who embrace the health of their adolescents. Parental decisions about lifestyle choices for their children and personal decisions made by adolescents and young adults can have significant consequences later in the form of adult illnesses and disabilities.

### Description

#### Introduction

Adolescence is the period of transition in the human life cycle between ages 10 and 19 that initiates with puberty and ends with the movement into the young adult period of life (ages 20–24 years) (Greydanus and Patel, 2010a). Approximately half of the world's population is under 25 years of age. In the United States, 14 % of the population is between 10 and 19 years of age (42 million) and 20 % between 10 and 24 years of age (nearly 60 million). Approximately one-fifth of American youth live in poverty and slightly less than half of them belong to ethnic or minority groups (i.e., Hispanic 22 %, Black 15 %, Asian 4 %, and others 5 %). As the twenty-first century progresses, this group (especially the Hispanic population) will increase in numbers and as a percentage of the overall population.

Adolescent "▶ well-being" is defined by the presence of physical, mental, economic, and environmental health in this age group, as well as by having parents or guardians who embrace the health indicators outlined in Table 1, which are based primarily on the US Centers for Disease Control and Prevention (CDC, Atlanta, Georgia, USA) Healthy People 2010 Project. Parental decisions about lifestyle choices for their children and personal decisions made by adolescents and young adults can have

**Health Promotion, Table 1** Leading health indicators at a glance

| | |
|---|---|
| Physical activity | |
| Overweight/ obesity | |
| Tobacco use | |
| Substance abuse | |
| Responsible sexual behavior | |
| Mental health | |
| Injury and violence | |
| Environmental quality | Physical environment and safety |
| | Clean air to breathe |
| | Exposure to polluted air and secondhand sources |
| | Adequate space to prevent crowding |
| | Adequate parental and care giver protection to prevent exposure to dangerous conditions causing injury |
| Immunization | |
| Access to health care | Ethnicity |
| | Culture |
| | Special health-care needs |
| | Health insurance coverage |
| | Communication obstacles |
| Demographic background | Family/social environment |
| | Presence/absence of parents |
| | Single-parent family (may increase risk of poverty) |
| | Immigration status |
| | Primary language spoken in the Home |
| | Birth to mother (<age 18) |
| | Economic circumstances |
| | Poverty |
| | Low food security |

Adapted from Centers for Disease Control and Prevention (CDC). National Center for Health Statistics (NCHS). *Healthy people: Healthy people 2010 leading health indicators at a glance*. Accessed February 15, 2011, from http://www.cdc.gov/nchs/health_people/hp2010/hp2010_indicators.htm

significant consequences later in the form of adult illnesses and disabilities (Federal Interagency Forum on Child and Family Statistics, 2009).

## Chronic Conditions

By 2015, nearly half of the overall population in the United States (48 %) will have one or more chronic conditions that result in serious health consequences, including cardiovascular disease (CVD). Youth with chronic illness or disability may need a greater degree of support, resources, and guidance, particularly if periodic or prolonged hospitalization and medical care become necessary to ensure that they grow into psychologically and physically healthy adults (Greydanus, Pratt, Patel, & Calles, 2009). Current research shows that many adult illnesses and disabilities are preventable if good habits begin in childhood and adolescence.

## Nutrition

Proper nutrition is vital for the overall health of the adolescent, whose individual nutritional needs can vary depending on the specific growth phase and activity level (Petersons, Bruss, & Bruss, 2006). Growth during puberty contributes 50 % of a person's adult weight and 25 % of adult height. Energy is needed by young people to allow for such growth and also to maintain normal body functioning. Additional needs occur in selective situations, such as during pregnancy (i.e., folate supplementation to prevent neural defects in the baby) or during prolonged, vigorous physical activity.

Foods from a variety of nutrient-dense sources are important for optimal health including fruits, vegetables, dairy, protein sources, and whole grains; dietary intake should also provide sufficient fiber and water intake. This type of diet allows exposure to adequate amounts of proteins, carbohydrates, healthy fats, minerals, and vitamins. Food sources of vitamins, thiamine, and folacin are as follows: whole milk and fruits (such as tomatoes, citrus, and strawberries) and vegetables (yellow, green leafy, broccoli, uncooked potatoes) for vitamins A, C, and D; fish and eggs for vitamin $B_{12}$; and beans, nuts, peas, pork, fresh oranges, navy beans, dark leafy vegetables, and enriched whole grain wheat products for thiamine and folacin. These vitamins provide for optimal health as an adolescent and minimize risks for later development of chronic illnesses such as metabolic syndrome, diabetes, atherosclerosis, osteoporosis, and loss of teeth (due to poor oral health including dental caries). Fats, oils, and sweets should be consumed sparingly. Thus, a well-balanced diet from a variety of sources is recommended for all adolescents and should be eaten over regular periods during waking hours. Unfortunately, many youth skip meals, eat unhealthy diets, consume excess supplements, and/or experiment widely with different diets. For example, consumption of too many calories with inadequate physical exercise has resulted in the current high global rates of obesity, which range from 15 % to 25 % in this age group (Whitlock, O'Conner, Williams et al., 2010). In other parts of the world, limited food supplies may result in malnutrition with limited access to adequate energy, mineral, and caloric reserves.

Appreciation of cultural aspects of nutrition in adolescents is important for many youth who come from various ethnic groups or other countries.

Adolescents are at risk for three important mineral deficiencies: calcium, vitamin D (400 IU/day), and iron (aged 14–18 years – 11 mg/day vs. 15 mg/day in females) (Kirby & Goday, 2011). Peak bone mass develops during adolescence, and thus, adequate amounts of calcium (1,300 mg per day) are needed to lower risks for osteoporosis later in adult life. Rapid growth during adolescence increases the risk for iron deficiency, especially in females due to loss of blood during menstruation. Youth on vegetarian diets (i.e., no fish, meat, or poultry) are at risk for deficiencies in iron and zinc, while those on a more restrictive vegan diet (i.e., no animal products at all) are at risk for deficiencies in iron, zinc, calcium, vitamin D, and vitamin $B_{12}$. Others who may need mineral and vitamin supplementation include youth with some chronic illnesses, such as eating disorders (i.e., anorexia nervosa and even severe food allergies) and cystic fibrosis. Consultation with experts in nutrition is recommended in these situations to correct such nutritional deficiencies.

### Immunizations

Research into immunizations over the past 200 years had led to remarkable success in prevention of many infectious diseases using the principles of immunizations (Greydanus & Patel, 2010). For example, smallpox has been eliminated from the world except for limited stores of the smallpox virus kept at a few laboratories. Other vaccines for adolescents in the United States include hepatitis A vaccine; hepatitis B vaccine; human papillomavirus (HPV); influenza vaccine; measles, mumps, and rubella (MMR); meningococcal vaccine; pneumococci; tetanus, diphtheria, and pertussis (Td/Tdap); and varicella vaccine. Disease from wild poliovirus has been eliminated from the Western Hemisphere and is now limited to a few areas in Africa and Asia. Many countries are on the verge of eliminating various other infectious diseases, such as measles, mumps, rubella, and varicella (CDC, 1999).

Other vaccines are needed depending on each country's specific recommendations, which may change over time; these include vaccines for cholera, rabies, Japanese encephalitis, typhoid, yellow fever, and Lyme disease. Basic tenets of healthy living are based on the ability to prevent disease, and the application of current vaccines, as recommended by the World Health Organization (Geneva, Switzerland) and the CDC, represents a great achievement in this regard. This wonderful aspect of prevention begins in childhood, continues in adolescence, and is applicable throughout the human lifespan.

## Physical Health and Weight Control

Methods for helping adolescents increase their successful maturation to adulthood include learning how to use physical exercise to manage weight and stress and promote the development of a strong healthy body (Table 2).

### Mental Health

Adolescents who have mental illnesses suffer from impairments in their higher-order human capacities (e.g., emotion, motivation, and cognition) (American Psychological Association [APA], 2010; CDC, 2005). Chronic stress, ▶ anxiety, depression, substance abuse, and exposure to ▶ violence all contribute to these impairments. Stress and parental stress (Table 3) can result in youth experiencing anger, anxiety

**Health Promotion, Table 2** Examples of physical activity for children and adolescents

| | Age group | |
|---|---|---|
| Type of physical activity | Children | Adolescents |
| *Moderate-intensity aerobic* | Active recreation: hiking, skateboarding, rollerblading | Active recreation: canoeing, hiking, skateboarding, rollerblading |
| | Bicycle riding | Brisk walking |
| | Brisk walking | Bicycle riding (stationary or road bike) |
| | | Housework and yard work: sweeping or pushing a lawn mower |
| | | Games that require catching and throwing: baseball and softball |
| *Vigorous-intensity aerobic* | Active games involving running and chasing: playing tag | Active games involving running and chasing: flag football |
| | Bicycle riding | Bicycle riding |
| | Jumping rope | Jumping rope |
| | Martial arts (karate) | Martial arts (karate) |
| | Running | Running |
| | Sports: soccer, ice or field hockey, basketball, swimming, tennis | Sports: ice or field hockey, basketball, swimming, tennis |
| | Cross-country skiing | Vigorous dancing |
| | | Cross-country skiing |
| *Muscle strengthening* | Games (tug-of-war) | Games such as tug-of-war |
| | Modified push-ups (with knees on the floor) | Push-ups and pull-ups |
| | Resistance exercises using body weight or resistance bands | Resistance exercises with exercise bands, weight machines, handheld weights |
| | Rope or tree climbing | Climbing wall |
| | Sit-ups (curl-ups or crunches) | Sit-ups (curl-ups or crunches) |
| | Swinging on playground equipment/bars | |
| *Bone strengthening* | Games such as hopscotch | Hopping, skipping, jumping |
| | Hopping, skipping, jumping | Jump rope |
| | jumping rope | Running |
| | Running | Sports: gymnastics, basketball, volleyball, tennis |
| | Sports: gymnastics, basketball, volleyball, tennis | |

Used with Permission: Prevention of adult cardiovascular disease among adolescents: Focusing on risk factor reduction. NIHCM Foundation. Retrieved August 2008 from http://www.nihcm.org/pdf/CVDPrevention_FINAL.pdf

and depression, family and peer relationship conflicts, academic difficulties, low self-esteem, frustration, unhealthy eating, sedentary lifestyles (may lead to overweight/obesity), serious long-term illnesses, and mental health disorders that include suicidality (i.e., suicidal ideation, attempts, and death). The combination of psychosis and genetic predisposition to other severe mental disorders (i.e., schizophrenia, bipolar affective disorder) can also significantly impair normal development. Some medications prescribed to treat mental illness also may cause weight gain as a side effect.

In order to combat such ill effects, youth need to learn effective stress, anger, and mood management skills (Table 4). Young people with psychosis need effective psychiatric treatment. Youth who learn these lessons early have a greater chance of emotional health as they mature.

Youth of any age can be victims of violence. Males are at greatest risk during late

**Health Promotion, Table 3** Developmental patterns in exposure to violence

| Victimization in preteens and early adolescence (ages 10–13) *Peak risk period for*: | Victimization in later adolescence (ages 14–17) *Peak risk period for*: |
|---|---|
| Sexual harassment (same rate ages 10–17) | Assault with injury |
| Kidnapping | Assault by peer (non-sibling) |
| Witnessing family assault | Genital assault |
| Witnessing intimate partner (interparental) violence | Dating violence |
| Emotional bullying/teasing | Sexual victimizations of all types |
| Assault with weapon | Sexual assault |
|  | Sexual harassment (same rate ages 10–17) |
|  | Flashing or sexual exposure |
|  | Unwanted online sexual solicitation |
|  | Any maltreatment |
|  | Physical abuse |
|  | Psychological or emotional abuse |
|  | Witnessing community assault |
|  | Exposure to shooting |
|  | School threat of bomb or attack |

Adapted from Finkelhor, Turner, Ormrod, Hamby, and Kracke (2009)

adolescence (ages 15–19), while girls are at greatest risk when they are dating or are pregnant. Youth are at greatest risk in their homes and are more likely to experience violence at the hands of a sibling, parent, intimate partner, or, less commonly, a stranger.

## Sexuality

▶ Sexuality begins at birth or even at conception, and normal sexuality is a critical part of normal growth and development (Greydanus & Omar, 2011). All teens have a sexual life, whether with others or through fantasies. Freud contended that adults develop as sexual beings from birth through adulthood. By the time a child enters puberty, he/she should have developed a good self-image, a sense of security, a willingness to trust others, and a conscience with a normal sense of right versus wrong. If this is not the case, major problems in adolescence and adulthood are likely to unfold and can involve sexuality.

Sexuality involves various family, legal, ethical, moral, and religious issues. Sexuality is also a basic yet profound recognition that humans need other humans and that this human capacity to give and receive love represents a continuum from birth to death. As sexuality develops, the success or failure experienced by the child and teenager in this area has much to do with eventual success or failure as an adult. A key component to the healthy development of the teenager is how he/she proceeds through the stages of adolescent sexuality.

Normal sexual development is seriously impeded for youth who are exposed to sexual violence (i.e., rape, molestation) or pornography (electronic, paper, in vivo). These youth require early intervention, access to safety, and the ability to learn to control access to their own bodies. Youth should learn to engage in healthy sexual behaviors and choose partners who do not violate them or expose them to substance abuse. Youth also need to promote health by practicing safe sex, delaying unwanted pregnancy, or avoiding impregnating a partner until they are cognitively, emotionally, and financially ready to take on the responsibilities of parenting.

## Substance Use/Abuse

Substance use and abuse by adolescents and adults represent a serious global phenomenon. Youth who begin to ingest illegal or legal substances put themselves at risk of exposure to many toxic and dangerous chemicals (Greydanus & Patel, 2005). Adolescents who live in homes where

**Health Promotion, Table 4** Protective factors for adolescent development

| | |
|---|---|
| Communication skills | Use language effectively (oral, written, and sign language) |
| | Listening |
| | Expressive language |
| | Receptive language |
| | Negotiation |
| Behavioral control/ self-regulation | Impulse control |
| | Anger management |
| | Mood management |
| Environmental factors | Access to good schools |
| | Lives under consistent living |
| | Consistent educational environment |
| | School connectedness |
| | School success (math, science, social studies, language arts, and English) |
| Family | Strong, positive support system |
| | A caring adult |
| | Intact family |
| | Appropriate adult supervision |
| | Good communication within family |
| Personal health | Good |
| Intellectual ability | Good abstract thinking skills |
| | Well-developed conceptual and thinking skills |
| | Good problem-solving skills |
| | Ability to plan |
| | Ability to set and achieve goals |
| | Mental flexibility |
| | Future orientation |
| | Sense of hope, humor |
| | A positive sense of autonomy |
| | Confidence in their abilities |
| | Ability to maintain reciprocally healthy relationships |
| | Socially responsive |
| | Positive self-esteem |
| Physical activity | Regular consistent moderate- and vigorous-intensity exercise for 30–60 min (including aerobic activity, age-appropriate muscle, and bone strengthening activities) |
| Religious involvement | |
| Social competence | Ability to initiate new relationships |
| | A caring attitude |
| | Sense of independence |
| | Emotional stability |
| | Sense of morality |
| | Peer group with positive personal attributes |
| | Positive adult role models |

Adapted from Hawkins, Grahm, Williams, and Zahn (2009) and Resnick et al. (1997)

their parents or siblings are abusing substances are in danger of all forms of personal violation. These youth can survive such situations but will need a great deal of support and opportunity for health education as well as management.

## Surviving Adversity

Youth who experience adversity during maturation can still grow up to be healthy, responsible individuals with good intimate relationships and solid productivity. Research on resilience shows

**Health Promotion, Table 5** Managing stress, anxiety, or anger

| | |
|---|---|
| Identify and recognize factors that trigger your stress or anger | Identify how your body reacts to stress or anger (feel hot, clench teeth, heart beats faster) |
| | Recognize when your body is reacting |
| When you recognize stress, anxiety, or anger reactions in your body | STOP |
| Practice relaxation techniques | Take a deep breath and breathe out slowly to the count of 10 |
| | Say to yourself – BE CALM |
| | Walk away from the situation |
| | Go for a walk, stretch, run, etc. |
| Use your problem-solving skills | Rethink the situation |
| | Generate alternative actions |
| | Think about potential outcomes |
| | Weigh the consequences |
| | Chose a strategy |
| | Implement |
| | Evaluate outcomes |
| Practice effective communication skills | Reflective listening |
| | Use humor in tense situations |
| | Learn to identify which situations or people provoke feelings of stress or anger |
| | Recognize dangerous situations or people that result in you losing your cool or getting in trouble |
| | Avoid those situations or people |
| | Try to resolve conflict |
| | If you cannot resolve it – let it go |
| | Do not hold grudges |

that regardless of the conditions an adolescent is exposed to, if he or she can survive, there is always hope for wellness (Resnick et al., 1997). Several personal characteristics of survivors are identified in Table 5. They also need to learn how to use a number of self-management tools, including negotiation, communication, and recognition of danger to promote mental health, while minimizing the deleterious effects of stress and mental illness on their health (Table 5).

## Conclusion

Adolescence is characterized by critical periods of physical, psychological, cognitive, and social development. Adolescents' behaviors can have a significant impact on their current and future health.

Adolescents should be screened for health risk behaviors, presence of early risks factors, and treated for existing diseases (Greydanus et al., 2009; Greydanus, Pratt, & Patel, 2011; *Student Health and Academic Achievement* 2010; Whitlock et al., 2010). Parents and health-care professionals can pool their talents and resources to develop community-based prevention and treatment programs that focus on physical activity, full immunization, healthy food availability, and healthful eating.

The American Medical Association's (AMA) *Guidelines for Adolescent Preventive Services* (GAPS) emphasize the need to (1) deliver adolescent health services, (2) use health guidance to promote adolescent health and well-being for patients and families, (3) screen for relatively common conditions that cause significant suffering either during adolescence or later in life, and (4) administer immunizations (Elster & Kuznets, 1992). *Bright Futures*: *Guidelines for Health Supervision of Infants*, *Children*, *and Adolescents*, a collaborative project of the American

Academy of Pediatrics (AAP) and the US government, similarly stresses the following priorities as part of health supervision of adolescents: (1) physical growth and development, including healthy eating and physical activity; (2) risk reduction, including avoidance of tobacco; (3) social and academic competence; (4) emotional well-being; and (5) violence and injury prevention (Hagan et al., 2008). In closing, we thank Li-Hua Tsai, MA, Volunteer Psychologist, and Ms. Amy Esman, BA, Administrative Assistant, for their assistance in preparing this work.

## Cross-References

- ▶ Anxiety
- ▶ Mental Illness
- ▶ Substance Abuse
- ▶ Violence
- ▶ Well-Being

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## Health Related Quality of Life

▶ Health

## Health Risk

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### Definition

A factor that raises the probability of adverse outcomes for health (WHO, 2009).

### Description

In the early nineteenth century, the term "risk" had a neutral connotation as the possibility or mathematical probability of an event occurring (Douglas, 1986). Starting from the 1970s, there was growing attention to risk in various disciplines, including epidemiology, with numerous attempts to measure risks (Gabe, 1995). The term then assumed a negative semantic reference and became associated with danger. Epidemiology developed a risk analysis according to which the population was divided into groups on the basis of the risk to which people were exposed. During the 1980s, health risks were broadened to include the space of potential future illness and thus became the key element in "surveillance medicine" (Armstrong, 1995). In the 1990s, the term risk came into use in sociological analysis as a strong connoting feature of western societies (Beck, 1992; Giddens, 1990).

The 2009 WHO report (WHO, 2009) claims that "the leading global risks for mortality in the world are high blood pressure (responsible for 13 % of deaths globally), tobacco use (9 %), high blood glucose (6 %), physical inactivity (6 %), and overweight and obesity (5 %). These risks are responsible for raising the risk of chronic diseases such as heart disease, diabetes, and cancers. They affect countries across all income groups: high, middle, and low. The leading global risks for burden of disease as measured in disability-adjusted life years (DALYs) are underweight (6 % of global DALYs) and unsafe sex (5 %), followed by alcohol use (5 %), and unsafe water, sanitation, and hygiene (4 %). Three of these risks particularly affect populations in low-income countries, especially in the regions of Southeast Asia and sub-Saharan Africa. The fourth risk – alcohol use – shows a unique geographic and sex pattern, with its burden highest for men in Africa, in middle-income countries in the Americas and in some high-income countries."

Public health discourse draws on two health risk categories: external risks and internal risks (Lupton, 1994). The first are due to factors that are out of individual control, such as environmental risks, and are generated by society. Internal risks are due to individual lifestyle choices and behavioral risk, concerning smoking, nutrition, and physical activity.

In order to contain health-care costs, in some states, individual health risks are analyzed, and each one is assigned to a number of diagnostic groups. Age, gender, and sometimes also additional data on socioeconomic factors are used to measure people's health status and thus potential health services needs.

The health risk debate is strongly linked to health determinants studies. A more integrated approach is required to deal with health risks, stressing the relationship between micro-, meso-, and macro dimensions in health. Most public health policies, focusing on the individual dimension, underestimate the role of socioeconomic factors, developing an approach known as "victim blaming" (Sachs, 1996). Being in a condition of socioeconomic deprivation represents a key risk for most of pathologies. Moreover, the impact of external – macro – health risks have not been adequately considered in the policy political agenda, even though their potential health costs have been estimated as very high (WHO, 2004). The identification of health risks and their ensuing management represents an issue at policy level which is a crucial aspect within society, strongly linked to power relationships (Foucault, 1980), and which deserves to be more critically analyzed.

## Cross-References

- ▶ Death
- ▶ Diabetes Mellitus Type 1
- ▶ Health
- ▶ Health Determinants
- ▶ Health Status Measurement
- ▶ Health-Care Costs
- ▶ Mortality
- ▶ Obesity, an Overview
- ▶ Physical Activity

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# Health Risk Conditions

▶ Health Determinants

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# Health Risk Factors

▶ Health Determinants

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# Health Sector Organization

▶ Health Systems

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# Health State Values and Country-Specific Value Sets

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## Definition

Economic evaluation involving cost-effectiveness analysis (CEA) is increasingly being used to inform resource allocation in health care. Using a cost-per-quality adjusted life year (QALY) analysis, ▶ CEA enables comparisons across a wide range of diseases and treatments using a common measurement. The "quality" part of the QALY is estimated by ▶ preference-based measures of health.

Several national guidelines and recommendations for the economic evaluation of drugs and other health technologies advise, for comparison purposes, the choice of outcome parameters that are validated and used in the literature. Such outcome parameters include preference-based measures such as the EQ-5D, the SF-6D, the HUI, the QWB scale, or the AQoL. However, such preference-measures are language and cultural dependent. Therefore, there is an increasing need to not only perform language validations in different countries, but also derive country-specific value sets for preference-based measures. Over the last years, valuation surveys were performed in general population samples to derive preference system weights for the most widely used preference-based measures.

Some methodological issues arise from the use of preference-based measures, such as the existence of differences in stated preferences across countries and the use of nontraditional elicitation techniques. Ongoing research has been, however, discussing these issues and several papers have been published on these matters.

## Description

The use of economic evaluation has been increasing throughout the world to inform resource allocations in health care. The economic evaluation involves cost-effectiveness analysis (CEA) and cost-utility analysis (CUA) where the use of measures of health related–quality of life (HRQoL) has become increasingly important to evaluate the outcomes of treatments or ▶ health care programs (Drummond, Sculpher, Torrance, O'Brien, & Stoddart, 2005). These measures, often called ▶ preference-based measures of health, generate a single preference-based index that is usually used to estimate quality adjusted life-years (QALY) which are a common measurement used to compare outcomes across health care programs. In fact, the preferred outcome measure for conducting a CUA is often the QALY, which is calculated by multiplying the number of life-years gained from an intervention by a standard weight that reflects the HRQoL during that time. This weight is obtained from preference-based measures of health such as the EuroQol (EQ-5D), the Short Form 6 Health Survey Instrument (SF-6D), the Health Utilities Index (HUI), the ▶ Quality of Well-Being (QWB) scale, or the Assessment of Quality of Life (AQoL). In order to produce a value associated to each health status, these measures always combine a self-reported health state descriptive system with a set of preference weights (value set) to be applied to the self-reported data. The value sets are usually elicited from the general population in large survey studies using a choice-based method such as time trade-off (TTO) or standard gamble (SG) (Brazier, Ratcliffe, Salomon, & Tsuchiya, 2007).

The EQ-5D is a self-reported generic preference-based measure of health. It comprises two components: a health descriptive system and a visual analogue scale (VAS). The health descriptive system comprises five dimensions and each dimension can be rated at three levels (EQ-5D-3L), thus generating 243 different health states. The EQ-5D VAS is defined as a vertical thermometer ranging from 0 (worst imaginable health state) to 100 (best imaginable health state) where respondents assign a value to their health state at that moment in time. A sample of 3,395 individuals, representative of the UK population, valued 42 health states through TTO. Econometric models were estimated to calculate unique utility scores for all health states defined by the EQ-5D. These values, which constitute the EQ-5D index, vary between −0.59 and 1.00 (see Brazier et al., 2007 and Szende, Oppe, & Devlin, 2007 for a more detailed overview on the instrument). Recently, a new version of the EQ-5D has been developed. This new version has been designated by EQ-5D-5L since it has five levels in each of the five dimensions generating 3,125 different health states (more information about the EQ-5D-5L can be found on the EuroQol group's webpage: http://www.euroqol.org/).

The SF-6D is another econometric preference-based index. It is derived from 11 items of the Short Form 36 Health Survey Instrument (SF-36) and comprises six dimensions of health, each one with four to six levels (see Brazier et al., 2002 for a more detailed description of the instrument). The SF-6D thus describes a total of 18,000 different health states. Of these, 249 health states were valued by a representative sample of the general UK population using the SG. Econometric models were estimated to predict single utility scores for all health states defined by the SF-6D. These health state values constitute an index – the SF-6D index – which can be seen as a continuous value on a scale from 0.35 to 1.00. Another version of the SF-6D was developed based on the Short Form 12 Health Survey Instrument (SF-12).

The HUI has currently three different versions (HUI mark 1, 2, and 3), being the later version (HUI3) the most widely used of the three. HUI2 has seven dimensions and defines 24,000 health states, and HUI3 has evolved from it. Changes involving both dimensions and number of levels were made to the descriptive system of HUI2 to reduce the degree of structural dependence and increase sensitivity. The new classification system of the HUI3 defines 972,000 health states. The valuation surveys for HUI2 and HUI3 were conducted in Canada. The valuation tasks included valuing states using VAS, and VAS and SG simultaneously in order to transform VAS values into SG values. Published valuation functions for HUI2 and HUI3 were calculated using multi-attribute theory. Brazier et al. (2007) present a detailed overview of the two versions of the instruments.

The ▶ QWB scale is the oldest preference-based measure of health, and its basic structure and weighting scoring has remained largely unchanged over the past decades. Its health descriptive system contains two components: the first is three multilevel dimensions relating to function that produce 46 functional levels; the second is a list of 27 symptom and complex problems. This structure forms 945 health states. A sample of these health states was valued using a VAS by a sample on North American individuals. An overall health state score was calculated by a simple additive formula. Further details may be found in Brazier et al. (2007).

The AQoL has currently two versions. The AQoL1 has five dimensions, each one with a different number of items. The items have four levels each. The advantage of this instrument over the others is that it uses a number of different items within a dimension. The AQoL2 comprises six dimensions, 20 items, and more than four levels. A stratified sample of 363 Australians was used in a two-stage valuation procedure to generate the utility weights of the AQoL. In this procedure, the valuation of item levels used VAS transformed into TTO, that was then used to generate values for the corner states and multidimensional states (see Brazier et al., 2007 for more details).

Currently, various national guidelines and recommendations for the economic evaluation of drugs and other health technologies indicate that is advisable, for comparison purposes, the choice of outcome parameters that are validated and used in the literature. Among them, we may cite the following: National Institute for Health and Clinical Excellence (NICE) (UK), Haute Authorité de Santé (HAS) (France), Institut für Pharmaökonomische Forschun (IPF) (Austria), Health Information and Quality Authority (Ireland), Canadian Agency for Drugs and Technologies in Health (Canada), College voor zorgverzekeringen (CVZ) (The Netherlands), Ministry of Social Affairs and Health (Finland), Instituto Nacional da Farmácia e do Medicamento (INFARMED) (Portugal), or Statens legemiddelverk (Norway). Such outcome parameters include preference-based measures as the EQ-5D, the SF-6D, the HUI, the ▶ QWB scale, or the AQoL. Although the EQ-5D has been widely considered as the most appropriate choice of instrument, most of these agencies feel it is inappropriate to require the use of the EQ-5D to the exclusion of any other methods meeting its underlying criteria (except for NICE that currently declares a preference for one of the referred preference-based measures of health as the generic instrument to be used in the measurement of HRQoL in adults). These instruments use preferences from the “informed” general public, which is the appropriate source to use for collective resource allocation purposes. Consequently, in CUA, the choice of the preference-based measure depends on its validation for the country population and on the availability of population preference values, elicited using techniques such as SG or TTO. In addition, ongoing discussion on the literature about the possibility of having international guidelines for economic evaluation has recently outlined the use of ▶ QALY or other similar measure as main economic outcome and the use of a preference-based (generic) measure as source of health values/utilities (Drummond & Rutten, 2008).

However, some methodological issues follow the development of these preference-based measures, such as the need to have country-specific value sets and the use of nontraditional elicitation techniques. Early work using preference-based measures has tended to use value sets from the original country where the preference-based was first developed (e.g., UK for the EQ-5D and SF-6D and Canada for the HUI) due to the high costs of conducting national valuation surveys that include high monetary costs and complex and time-consuming tasks. Nowadays, there is a growing interest in deriving country-specific value sets for the most widely used preference-based measures.

Therefore, the absence of a country-specific preference-based value set for the most used HRQoL instruments is a major problem for the usefulness of CUA for health care policy faced by several countries. From a health care policy point of view, the availability of a value set representing the preferences of the general population of the country would be a major strength. Moreover, there is evidence that stated preferences may differ across countries and there is an increasing interest in studying cross-country variations in health state values. On the one hand, there is evidence on cultural differences in the perception of health and suffering. On the other hand, countries differ in what concerns the availability of services and health resources, and contributing to differences in the importance given by individuals from different countries to a certain dimension.

Over the last years, valuation surveys were performed in general population samples to derive preference system weights for the most used preference-based measures. Given that the EQ-5D is the most popular preference-based instrument worldwide, it has the largest number of translations and also the largest number of country-specific value sets (by December 2012, there were preference system weights for at least 19 countries). General information about this instrument can be found on the EuroQol group’s webpage. There is also a growing interest in having country-specific preference system weights for the SF-6D. There are now specific value sets for the SF-6D for Portugal, Japan, Hong-Kong, and Brazil with preference system weights for Singapore currently being determined. HUI has also been valued to other countries, in special, HUI2 in the UK and HUI3 in France.

Ongoing research has been reinforcing the idea of the existence of differences in stated preferences across countries. Several papers have been published over the last years comparing national value sets from the same preference-based measure discussing the issue of obtaining different utility values and hence different ▶ QALY.

Previous studies have reported differences in EQ-5D preference weights that might have important effects on estimates of incremental cost-effectiveness (e.g., Bernert et al., 2009; Huang et al., 2007; Johnson, Luo, Shaw, Kind, & Coons, 2005; Noyes, Dick, & Holloway, 2007). Others have reported substantial differences on HUI2 preference weights from the original Canadian values (Brazier et al., 2007).

Recently, Ferreira, Ferreira, Rowen, and Brazier (2011) published their research addressing this issue of comparability of country-specific value sets by examining Portuguese (PT) and UK preference weights for the SF-6D obtained using different valuation methods. The purpose was to fully understand the existing relationship between the valuation technique and whether health state values differ across different populations. Comparisons of the PT and UK ordinal value sets evidenced a high level of agreement between them, suggesting a robustness of the rank relationship for the PT and UK population samples used in the study. Nevertheless, the PT ordinal weights were found to be systematically lower than the UK weights for physical functioning and ▶ pain. A possible explanation for this is that UK and PT respondents potentially give different weights to these dimensions when ranking the health states. This suggests that physical functioning and pain are more important to the PT population than for the UK population. On the other hand, it could also be argued that the results are due to differences in the reference point used by different populations. Whereas these differences could be due to differences in the valuation studies such as study design, interviewer effects, or year of study, the remaining differences may reflect cultural dissimilarities between countries. However, it is difficult to separate and isolate these differences. Moreover, comparisons between the SG value sets from both countries identified important differences between them, stressing the importance of using Portuguese-specific country value sets.

Another issue that should be taken into account when comparing country-specific value sets is the valuation technique used. Traditionally, the main techniques used to value health states to elicit utility values are SG and TTO. However, in recent years, there has been a growing interest in using ordinal elicitation methods to derive utility values. The use of ordinal data (rank data) could be an alternative to cardinal methods, usually more expensive, time-consuming, and involving complex tasks to be carried out and fully comprehended by older individuals or by individuals with low educational levels. Recent research has been carried on the estimation of rank preference-based value sets for the EQ-5D for the UK (Salomon, 2003) and for the SF-6D for the UK (McCabe et al., 2006) and for Portugal (Ferreira et al., 2011). Several papers have addressed this issue comparing EQ-5D TTO-based with EQ-5D VAS-based value sets (see Szende et al., 2007 for more details). Others have discussed the choice of the valuation method used to derive the value sets and have argued that the use of other methods rather than the SG, the gold standard for eliciting utilities, could contribute to the existing differences on the most commonly used preference-based outcomes, the EQ-5D and the SF-6D (Tsuchiya, Brazier, & Roberts, 2006). Few have addressed the issue of comparability between the SG-based value sets and rank-based value sets (Ferreira et al., 2011; McCabe et al., 2006; Salomon, 2003) and have performed cross-country comparisons on ordinal preference-based value sets (Ferreira et al., 2011).

Recent research has advocated the use of cardinal methods such as the SG or the TTO to measure preferences and hence elicit utility values to generate country-specific value sets to obtain health values that can be used to estimate ▶ QALY, enabling a comparison of outcomes in CUA. However, there is still little research to suggest that ordinal and cardinal values can be translated as equal preferences since rank tasks are not choice based. Given that respondents are not asked to trade between alternatives, there is still a need to further investigate whether the data provided by rank tasks can, in fact, be used as utilities, as those elicited from choice-based methods and, also, if the relationship between ordinal and cardinal tasks is as well affected by population's inherent characteristics. Differences were found between preference weights estimated using elicitation techniques of SG and ranking using samples from UK and Portugal. Rank preference weights were found to be much more similar for the UK and PT populations than those estimated using SG. Nevertheless, these discrepancies should be further investigated, particularly across other countries and other cultures.

For the time being, transferring utilities from one country to another without an adjustment is not advisable.

## Cross-References

▶ SF-36

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# Health Status Measurement

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## Synonyms

Changes in health status; Functional health status

## Definition

Illnesses and medical interventions may affect several aspects of a patient's life. Health status is a multidimensional concept that is usually considered according to the World Health Organization (WHO) definition of health (WHO, 1948). Here, health is defined in terms of physical, mental, and social well-being, not merely the absence of disease or infirmity.

## Description

Traditional evaluation of health status involved only biomedical etiology – the clinical evaluation of objective (laboratory) outcomes, such as blood tests and X-rays. Even in clinical practice today, an individual's health status remains commonly measured by a healthcare professional who performs an examination and rates the individual along any of several dimensions of health status. However, the gradual acceptance of the WHO definition of health has led to an increasing focus on the subjective; indeed, it is now widely accepted that "any evaluation of healthcare interventions which ignores how patients feel can provide only a limited account of the success or otherwise of treatment" (Jenkinson & McGee, 1998; p. iv). A report that comes directly from the patient without amendment or interpretation of the patient's response by a clinician or anyone else (US Department of Health and Human Services, 2009), therefore, is arguably a more valid method of evaluating many outcomes. This is particularly true when considering health status given its multifaceted and individually weighted nature.

Although important to acknowledge the complexity of individualized health status, in clinical trials and clinical practice it is impractical to utilize qualitative methods to evaluate patients' subjective health status. However, in both these settings, health status may be an important outcome. In clinical trials of pharmaceutical (or alternative) therapy, patient-perceived subjective health status can offer an opportunity to identify potential differentiation between products, with or without evidence of objective physiologic improvement (Deyo & Patrick, 1989). In clinical practice, patient-perceived health status can inform the appropriate choices among alternatives for a given individual and can be used to screen patients or community populations in order to evaluate their needs for particular services. In order to achieve these goals, patient-perceived health status is increasingly being measured by standardized questionnaires known as patient-reported outcome measures (PROMs) on which the patient can potentially be placed along a continuum from perfect health to death.

There are broadly two main types of PROM used for measuring health status in both clinical research and practice: generic and disease specific. Generic PROMs assess concepts that are relevant to everyone, enabling assessment and comparison across various conditions. They are thus most relevant to inform resource allocation decision-making in the healthcare system, although they generally do not enhance the understanding of the patient-perceived impact of any specific condition (Speight, Reaney, & Barnard, 2009). Disease-specific measures have greater salience for healthcare professionals because they focus on functional areas of particular concern in that particular disease. The generic medical outcomes study short-form health survey (SF-36) (Ware & Sherbourne, 1992) and the EuroQol Group 5-dimension health status questionnaire (EQ-5D) (EuroQol Group, 1990) are the most widely cited PROMs for measuring health status. The SF-36 has summary measures of physical and mental health, and the EQ-5D measures mobility, capacity for self-care, conduct of usual activities, pain/discomfort, and anxiety/depression. Frequently these are used to detect differences between people with or without certain conditions or between people following different treatment regimens in a given disease/condition. However, disease-specific PROMs incorporate questions identified as salient by patients with the disease/condition of interest and may therefore possess greater responsiveness to disease-specific interventions (Jull, Parag, Walker, & Rodgers, 2010).

In addition to that detailed above, patient-perceived health status measurement can be used to adjust life *quantity* for life *quality* in decisions about healthcare resource allocation. It is important to acknowledge that health status is clearly only one of many dimensions which may contribute to quality of life (McGee, O'Boyle, Hickey, O'Malley, & Joyce, 1991). Despite this, both the SF-36 and EQ-5D are often referred to as (health-related) quality of life instruments (Prutkin & Feinstein, 2002). Both are frequently used in randomized clinical comparator trials of pharmacotherapy to allow utility estimates of "quality-adjusted life years" (QALYs) (National Institute for Health & Clinical Excellence, 2010) to be evaluated for payer agencies. If used in isolation, as is common, as measures of health status, they are unlikely to present a full and accurate picture of the individual's quality of life. For example, those with disabilities may score low on mobility and self-care but still consider themselves to have a good quality of life. Conclusions will be distorted if the terms are used interchangeably.

It should be acknowledged that health status measurement through PROMs is based on the premise that patients are able to provide reliable and reproducible assessments of specific aspects of their functioning (Goldfield, 1996), a rather under-researched area of psychology. A relative lack of scientific evidence for the clinical utility of collecting health status data via PROMs, as well as the inevitable cultural variability in responses, remain further barriers to their widespread use. To ensure that meaningful and clinically relevant conclusions can be drawn from PROM data, it is clear that the PROM must demonstrate sensitivity, specificity, reliability, and validity prior to its use. Thus, although researchers are often keen to use a "well-validated," published measure, its validity and reliability need first to be checked within a sample from that population. As an example, a measure designed for the general adult population may be hard for older people to complete without assistance. Furthermore, the range of possible responses may mean that older people all score very poorly (a floor effect) so that any treatment under investigation is unlikely to detect an improvement.

Health status, as perceived by the patient, is clearly a key concept in the modern delivery of healthcare. Beyond the prevention and treatment of disease, patient-perceived health status can be used in health promotion, to seek maintenance of the level of health and, insofar as possible, strengthen the potential for good health (Breslow, 1989), rather than focusing on just the absence of poor health. However, no health status PROMs currently exist for evaluating the health of an entire population. It is rather assumed that a population's health can be deduced by aggregating data collected about individuals. In a given disease area, or demographic within a disease area, this usually takes the form of epidemiological data such as incidence and prevalence of mortality and morbidity parameters. However, "death rates get you only so far" (Timmins, 2008; p. 1464); even for elective cardiac surgery, the death rate is below 1 % (Timmins, 2008). Although epidemiological data allow for the comparison of populations with one another, or to themselves over time, such analyses require many assumptions to hold true regarding disease progression and treatment attrition to minimize error and confounding bias. For example, patients are known to adjust their perceptions of what is "good health," as they grow accustomed to living with their particular health condition, its treatment, and the limitations that these bring.

In both clinical trials and clinical practice, practitioners and researchers need to pay attention to collecting from patients the sort of health status information that complements rather than repeats traditional clinical data. Careful consideration needs to be given to the choice of PROM and its suitability to the particular health condition, patient group, and/or treatment of interest. When measured appropriately, patient perception of health status is a useful tool in healthcare decision-making. In addition, other important information can be obtained using measures of other patient perceptions, such as symptoms, quality of life, or treatment satisfaction.

## Cross-References

- ► Quality of Life
- ► SF-36

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## Health Status Measurement and Sexual Orientation

▶ Sexual Orientation and Mental Health

## Health Systems

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### Synonyms

Health-care organizations; Health-care systems; Health sector organization

### Definition

The definition of health systems has enormous variations, especially regarding the boundaries of the health system (Figueras & McKee, 2012). The most widely accepted definition was produced by the World Health Organization in its World Health Report 2000. According to that definition, health systems can be understood "as comprising all the organizations, institutions and resources that are devoted to producing health actions" (WHO, 2000, p. xi). In an expanded definition, the World Health Organization asserts that a health system "consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health" (WHO, 2007, p. 2), as well as compensating for permanent disabilities, regardless of whether health agents are public, governmental, nongovernmental, or private.

According to Figueras and McKee (2012, p. 5), a health system would include three items:

(a) The delivery of (personal and population-based) health services, including primary and secondary prevention, treatment, care, and rehabilitation
(b) The activities to enable the delivery of health services, specifically the functions of finance, resource generation, and stewardship
(c) Stewardship activities aimed at influencing the health impact of relevant interventions in other sectors, regardless of whether or not the primary purpose of those interventions is to improve health

### Description

Health systems reflect the prevailing values of a society that express in legal and institutional environment for health policy formulation and implementation and for health organizations development. Thus, countries organize their health systems according to national values and principles in order to achieve the health objectives being pursued. The specific characteristics of each health system depend on the history and socioeconomic conditions of each country, the influence of different interest groups, and the power relationships among political forces (PAHO, 2007).

Although some sort of organization to deal with health has long existed in history, health systems as they are conceptualized in modern times correspond to societal arrangements developed during the last century. The first experience of organizing a social response to health occurred in Germany in 1883 under the Bismarck government. The Bismarckian model is an arrangement of compulsory membership and entails mandatory work-related contributions by employers, employees, independent workers, and pensioners (McKee, 2002). This arrangement evolved from previously existing voluntary funds of groups of individuals who pooled money to obtain financial security in the event of a future in which they could have been worse off (Saltman & Figueras, 1997). During the first decades of twentieth century, social insurance started to spread throughout Europe (Saltman & Figueras, 1997) and other regions of the world.

Some countries such as the United Kingdom, Ireland, and the Nordic European countries evolved to a different type of arrangement that is predominantly funded by general tax revenues. This arrangement is known as Beveridge model after economist William Beveridge who headed a parliamentary committee that in 1942 delivered a report that was a fundamental step towards the later creation of the British National Health Service in 1948 (Saltman & Dubois, 2004).

In both compulsory health insurance and tax-based arrangement, the health system is part of a broader social security arrangement which includes pensions and unemployment benefits among other items of social protection (Saltman & Figueras, 1997).

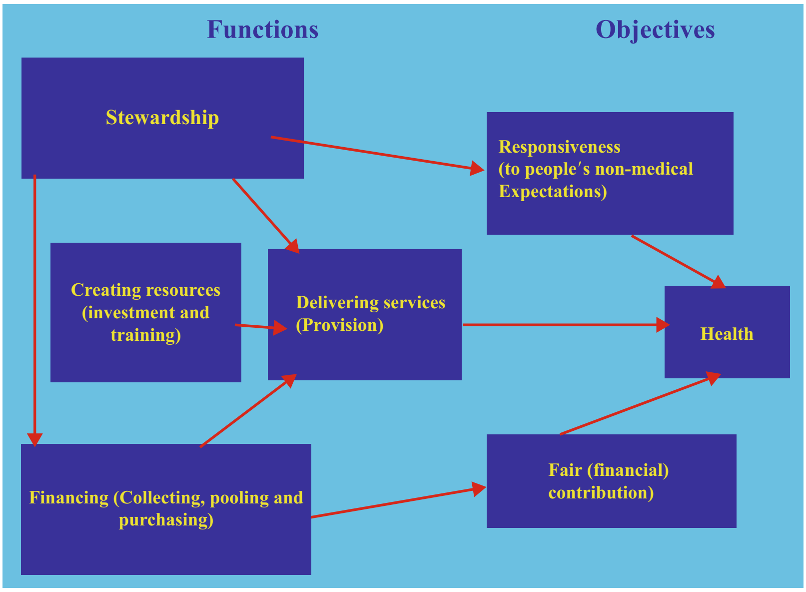
The level of health of the population is affected by different factors being the social determinant more influential than biological factor or the health-care organization. The term social determinant of health, that started to be systematically used since mid-1990s, is defined as the living and working social conditions of the people's everyday life. More importantly, the structural social determinants of health are responsible for a major part of health inequities between and within countries (WHO, 2008).

Health systems are considered to be an intermediate social determinant of health (WHO, 2008) which means that the health system at its own cannot explain inequities in health. However, the health systems through modulation of the access to services can modify the vulnerability of people and the consequences of the disease, which in turn has impact on the quality of life of those who are affected by the disease and their families (WHO, 2005). Besides providing health-care services, including access and financing of both curative and preventive care, the health system can prevent negative social consequences of diseases (WHO).

Figueras and McKee (2012) propose a framework to understand the contribution of health systems to societal well-being. According to this framework, health systems would contribute to well-being in three ways: (1) producing health which in itself is a component of well-being, (2) being health services a significant component of the economy and thus having health systems a direct impact on wealth, and (3) contributing directly to societal well-being "because societies draw satisfaction from the existence of health services and the ability of people to access them, regardless of whether or not services are effective or indeed whether or not they are used" (Figueras & McKee, 2012, p. 8). In this framework, context would refer to the countries' specific socioeconomic, cultural, and political environment in which relationships between health systems, health, wealth, and societal well-being occur.

Improving health is the primary objective for a health system. In order to fulfill this defining mission, the health system addresses the challenge of making "the health status of the entire population as good as possible over people's whole life cycle, taking account of both premature mortality and disability" (WHO, 2000: 27). This objective entails two dimensions: (i) the best attainable average level—this is considering the population as a whole—and (ii) the smallest feasible differences in health level among individuals and groups. A health improvement is, therefore, achieved when there is a gain in either one of these dimensions and no worsening in the other (WHO).

Although the main purpose of a health system is to contribute to improving the health of the population they serve, responding to people's



**Health Systems, Fig. 1** Functions and objectives of a health system (Source: WHO, World Health Report 2000, p. 25)

expectations and providing financial protection against the costs of ill-health are two intrinsic goals that the health system needs to develop in order to achieve its main purpose (WHO, 2000). Fair financing contributes to better health by distributing costs according to people's ability to pay rather than to the risk of illness and thus reducing people's risk to be excluded from health care due to the cost of it or the risk to deteriorate people's economic status from paying for health care (WHO). Health is also achieved by a system with higher level of responsiveness because health service utilization will increase if people feel they will be treated with respect for their dignity, confidentiality, and autonomy, taking into account their nonmedical expectations (WHO) (Fig. 1).

Four basic functions are identified in a health system: resource generation, financing, service provision, and stewardship (WHO, 2000).

The service provision function is the most easily identified with the health system. It means the delivery of health care to the population the health service serves.

Resource generation implies the investment efforts of the system, which can be understood as the monetary sacrifices to obtain future benefits. The training of human resources for health is also considered in this function.

In the financing function funds collection, pooling and purchasing are included. The functions of service delivery and resource generation are supported by the financing function.

The stewardship function appeals to both the health system's responsibility for people's health and the appropriate use of resources made available for the system by the entire society. An important component of this function is regulation, especially regulation exerted by governments that set the rules to be followed by the different actors involved in the health system.

Health systems have made important contributions to improving health during the twentieth century, and their role has become increasingly important (WHO, 2000). Recent evidence suggests that health systems have varying success in improving health and also that health services can provide considerable potential gains (Nolte, McKee & Evans, 2012).

The World Health Organization has proposed that goals of improving health nationally and internationally cannot be achieved unless greater and more effective investment in health systems is made (WHO, 2007). In order to promote a common understanding of what constitutes health systems strengthening, WHO proposes a framework based on six building blocks based

**Health Systems, Table 1** WHO's six building blocks of a health system

| | |
|---|---|
| Good health services are those which deliver effective, safe, quality personal, and nonpersonal health interventions to those that need them, when and where needed, with minimum waste of resources | A well-functioning health system ensures equitable access to essential medical products, vaccines, and technologies of assured quality, safety, efficacy, and cost-effectiveness, and their scientifically sound and cost-effective use |
| A well-performing health workforce is one that works in ways that are responsive, fair, and efficient to achieve the best health outcomes possible, given available resources and circumstances (i.e., there are sufficient staff, fairly distributed; they are competent, responsive, and productive) | A good health financing system raises adequate funds for health, in ways that ensure people can use needed services, and is protected from financial catastrophe or impoverishment associated with having to pay for them. It provides incentives for providers and users to be efficient |
| A well-functioning health information system is one that ensures the production, analysis, dissemination, and use of reliable and timely information on health determinants, health system performance, and health status | Leadership and governance involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition-building, regulation, attention to system design, and accountability |

Source: WHO (2007, p. vi)

on the functions defined in World Health Report 2000 and described above. The building blocks are service delivery; health workforce; information; medical products, vaccines, and technologies; financing; and leadership and governance (stewardship) (Table 1).

Health systems have been affected by changes over time. After the Second World War, state responsibilities grew as social security systems expanded across European countries, and an expansion of health-care services was observed over the next two decades (Relman, 1988). A similar trend was also observed within the Latin-American region, in which during the 1960s, and even more so during the 1970s, government health policies emphasized increased coverage for the unprotected, estimated at that time at one-third of the entire regional population (PAHO, 2001).

By the end of 1970s, health systems in industrialized countries, which had been expanding for the preceding three decades, started to face costs problems, which led government health policies during the 1980s to be driven by cost-containment strategies.

During the 1990s, governments started to receive increasing pressure from users who were better informed and who therefore demanded better quality and more timely responses for their health-care needs. As a result, without abandoning cost-containment policies (Locker, 2002), governments focused their health policies on quality of health-care services and accountability (WHO, 2000).

During the last two decades, many changes in health services have been implemented by governments of both developing and developed countries and are generically referred to as health reforms. Beyond differences regarding the definitions of the term, there are some recognizable features of different reform processes. According to Mills et al. (2001), these elements are restructuring of public sector organization, which includes decentralization and changes of publicly owned facilities so that they run more like privately owned establishments; changes in the way resources are allocated and paid to both organizations and individuals, generally with the pursued aim of linking performance and reward; encouragement of greater plurality and competition in the provision of health services; a move towards increased financing for health from non-tax revenues; and an increase in both consumer power and consumer choice.

Some of the strategies that have been proposed to strengthen health services are (WHO-Euro, 2009):

- Investing in health systems
- Delivering integrated and cost-effective services
- Investing in human and capital resources
- Achieving people-centered care
- Sustaining performance through health financing policy

## Cross-References

- ▶ Health
- ▶ Health Systems
- ▶ Public Health

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# Health, Happiness, Soundness, Satisfaction, Success

▶ Psychosocial Adjustment (Includes Psychosocial Functioning and Well-Being)

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# Health, Sexual

▶ Sexual Satisfaction

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# Health, Subjective

▶ Subjective Health and Subjective Well-Being

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# Health: Well-Being, Fitness, Stamina, Strength

▶ Occupational Health

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# Health-Adjusted Life Years (HALY)

▶ Quality-Adjusted Life Expectancy

# Healthcare

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## Synonyms

Healthcare services; Healthcare structures; Healthcare systems

## Definition

The term healthcare, as defined by the World Health Organization, encompasses each and every activity that includes the prevention, treatment, and management of disease, the preservation of mental and physical health and well-being and the services offered by doctors and other health professionals.

Healthcare is therefore understood to mean all the structures and services for treatment available to the patient as a whole.

## Description

The Healthcare system guarantees the provision of the type of services which allow people to achieve an optimum state of well-being, regardless of their living environment and at any stage of their lives (Princeton University, 2011).

Healthcare has a direct bearing on the ► health of individuals as it provides solutions, courses of treatment, and the relief of illness-associated pain. On the other hand, healthcare indirectly affects the health of individuals insofar as it constitutes a fundamental component of the social protection of individuals by reducing their insecurity caused by a lack of health protection (Costa, Cardano, & De Maria, 1998). It can therefore be said that healthcare plays a part in reducing ► health inequalities.

Healthcare falls into three distinct categories: first, formal care provided by established healthcare systems regulated through legislation; second, complementary healthcare, i.e., nonconventional medicine (CAM) (Tognetti Bordogna, 2010a); third and finally, informal, traditional medicine (e.g., folk medicine, old wives' tales). The World Health Organization estimates that 80 % of the world's medical treatments fall into this last category.

Health, illness, and health-related activities are considered to be symbolic systems comprised of a significant set of values, rules, and behaviors and of the reciprocal relationships between all of these components. Leisle (1980) takes a pluralist approach and includes in healthcare systems all the medical traditions used in a given society (biomedical, traditional, folk, alternative, syncretic), although widely different.

The field of healthcare includes:

- Activities of prevention, diagnosis, treatment, therapy, and rehabilitation
- Palliative treatments
- Home care
- Healthcare services assessment
- Sale and supply of medicines

Healthcare is the most highly distinguishable function of any health system since it allows the actual supply of medical services (Clarke, 2001; U.S. Department of Health and Human Services, 2011). The term "treatment provision" enables our understanding of how and where the healthcare services are provided, regardless of their organizational and formalization models. Who pays for these services and how they are paid for is an issue of healthcare funding (Federici, 2002).

In order to improve the quality of healthcare and access to it, as well as extend its coverage, it is vital for resources to be available. This is why, in the industrialized nations, a proportion of the country's resources are set aside for healthcare through public funding or private insurance.

At the present time, countries worldwide are dealing with the problem of reducing health expenditure, in view of demographic development and the increasing demand for medical services (Tognetti Bordogna, 2010b). In the modern social state, there is now a growing need for a healthcare policy which will ensure that advances in medicine are made more accessible to wider circles of the population. Rapid social and economic changes have also impacted on the healthcare system which, in the same way as medical expertise, is in a continual state of evolution in relation to social and political changes. Health and illness models change over time, and according to cultural context, and are closely associated with economic, political, and social transformations, as well as with variations in values, behavioral models, and subjective perceptions (Commission on Social Determinants of Health, 2008; Field, 1973).

The outmoded concept of healthcare based on the "reparative" model of illness has paved the way for a new era of healthcare aimed at preventing illness, eliminating risk factors, monitoring the efficiency of sociomedical interventions, and empowering the patient throughout the treatment process.

Due in part to growing demand for its services, healthcare is currently undergoing a period of significant expansion and is starting to include privately offered services, managed according to market criteria. In some cases, these private services lead to public-private partnerships. In order to facilitate access to healthcare services, many programs envisage the direct involvement and participation of members of the community.

In actual fact, healthcare is only part of the process of treating illness to achieve a state of ► wellness. Nowadays, individuals dealing with prognoses, treatments, and therapies for serious illnesses are increasingly asking for advice on wellness, thereby expanding their own goals of merely recovering from their illness or overcoming their pains (Ingrosso, 1994). Thanks to more readily available and timely information, patients are increasingly focusing on a model of health to improve their well-being which requires them to adopt more healthy lifestyles and take better care of themselves by following healthy eating plans, doing physical activity, staying at health farms, and even undergoing surgery for aesthetical purposes (World Health Organization, 2011) Fitness, in the sense of improving the body's functionality and physical efficiency, has become synonymous with being well, with wellness.

What is more, some aspects of daily life become targets for treatment themselves through the process of medicalization.

The term "medicalization" was coined in the area of sociological research to denote the social effects of medicine that go beyond the strictly therapeutic level, thus medicalizing social behaviors. Furthermore, the progressive widening of the institutionalization of illness has led to the development of secondary and tertiary interventions such as treatment, rehabilitation, and specialist medicine options.

Nowadays, the fields of medicine and treatment have transcended the purely medical sphere and are overlapping with social issues, which in turn are aimed increasingly towards medicine. The socialization of healthcare has undergone a huge transformation in the past few years, a change which occurred on the back of the shift in cultural models, improvements in people's social and economic situations and a better understanding of people's rights, including health rights.

Within this framework, Kleinman (1978); Scrambler (2003) suggests considering health systems as essentially cultural systems.

In conclusion, medicine is only one of a number of factors which have brought about a consistent increase in life expectancy over the last 60 years.

## Cross-References

- ► Health
- ► Health Outcomes
- ► Health Systems
- ► Health-Care Costs

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## Health-Care Costs

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### Synonyms

Value of health-care resources

### Definition

The costs for individuals, organizations, or a society directly or indirectly incurred by the provision of health-care goods and services, aimed at maintaining or recovering the health of a person or of a population.

### Description

In recent decades, rising costs and spending limits have not only prompted a search for greater efficiency in resource utilization but have also stimulated the adoption of a comprehensive approach to health-care costs, considering costs for individuals, organizations, and society as a whole. In this view, economists use the concept of opportunity costs, which relies on the idea that resources are scarce relative to needs. Opportunity costs of a health-care intervention are represented by the value of resources used in this intervention which prevent their use in other ways. It is best measured by the health benefits, such as life years saved and quality-adjusted life years (QALYs) gained, that could have been achieved if the money spent on the intervention had been spent on the next best alternative health-care intervention or program (Palmer, 1999).

Health-care costs can be divided in three types (Drummond, Stoddart, & Torrance, 1987):

1. Direct costs, which include the costs for the resources (e.g., personnel, medicines, equipment, building, power) consumed to provide particular health-care goods or services
2. Indirect costs, which are the total sum of productivity costs, related to lost productivity incurred by patients or caregivers leaving work to provide care for the patients
3. Intangible costs, indicating features like pain, anxiety, or grief, which cannot be directly quantified in monetary terms

Direct costs comprise medical costs (which are the costs for the provision of preventive activities, diagnostic procedures, and curative and rehabilitation therapies) and all nonmedical costs (e.g., transportation to hospital). Direct costs are related to the expenditure (public and private) necessary to cover them. They are usually considered in a “third payer perspective” that is the perspective of a funding organization (e.g., a national health service, a sickness fund, a private health insurance company). Indirect costs are included when a societal perspective is adopted. Two different approaches are used to calculate indirect costs: the human capital approach and the friction method (Koopmanschap & Rutten, 1996).

Three stages can be usefully distinguished in a costing study: identification, measurement, and valuation (Raftery, 2000). Identification consists of listing the likely resource effects of the health-care intervention as comprehensively as possible, so that it is possible to decide which effects might reasonably be excluded. Measurement refers to the measuring of the resource changes included in the study, such as the amounts of inputs (e.g., drug, labor) and of outputs (e.g., bed days, prescriptions), as well as patients' or caregivers' time. The last stage is the valuation of these resource effects.

Two strategies can be usefully distinguished in measuring and valuation: micro-costing and gross or top-down costing. Micro-costing is based on a bottom-up collection of data which allows a detailed analysis of the changes in resource use due to a particular intervention or program. Top-down costing allocates a total budget of a service or a providing organization to the single procedure or unit level. The two strategies are often combined, using micro-costing for the direct costs of the intervention and gross costing for other costs (Raftery, 2000).

## Cross-References

- ▶ Health
- ▶ Health Care
- ▶ Healthcare Expenditures as a Percentage of the GNP
- ▶ Public Health

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# Healthcare Expenditures as a Percentage of the GNP

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## Definition

Healthcare expenditures is the percentage (amount) spent on health services throughout the economy (country).

## Description

The healthcare provision of a country can be explained in terms of the proportion/percentage of the national budget allocated to the health sector per financial year. Many researchers have developed an interest on measuring the short- and long-term relationships between the two variables where by cost-benefit methodologies have been widely used. Some studies, especially in developing countries, have hardly examined the current status of the health sector in relation to sources of funding and the allocation criteria per each year's GNP. Their findings have been quiet similar in terms of challenges, funding problems, and the future status of the healthcare expenditures in LDCs (Audibert, 2010; Lindelow, 2005). At political stages around the world, healthcare expenditures and the entire healthcare system have drawn very interesting debates, especially in the western countries, due to different philosophical proposals (models) that have been raised by politicians on how this sector should be funded and operated in the modern world. All the proposed models, however, are campaigning for different ways that can help to bridge the gap between patients, doctors, and health insurance companies and hence increase the choices of health services provision in the country. Modern economist assumes that good healthcare system contributes significantly on economic growth of a country as it ensures efficient supply of labor force and contributes big to employment if it is efficiently utilized. One of the findings of the previous studies conducted in developing countries identified that poor and rudimentary access and availability of basic healthcare was also limiting the flow of FDIs and other investment opportunities as it reduces the number of efficient labor force in the market. In addition, they noted that in most developing countries (sub-Sahara Africa specifically), the healthcare sector is not a priority department in terms of allocation of funding as a percentage of gross national product (GNP). Instead they found education, defense, and infrastructures (road constructions) as the most prioritized departments in LDC's budgetary systems. For example, the World Bank data and research reports show that healthcare expenditures as a percentage of GDP for most sub-Sahara African countries for the past 16 years (1995–2010) have recorded an average percent ranging between 2.65 % and 6.67 % t with the exception of Sierra Leone (13.4 %), Sao Tome and Principe (10.3 %), and South Africa (10 %). Finally, for the past two decades, LDCs, especially in the sub-Sahara region, have been highly affected and wounded by preventable and treatable diseases such as malaria, HIV-AIDS, TB, and other respiratory infections which automatically have increased the demand for more healthcare expenditures as a percentage of GNP (Mackintosh & Mujinja, 2010). Thus, there is a need for more studies on the health sectors of developing economies that will help to reduce the heavy demand for quality healthcare that have been driven by burden of the diseases named above. In most developed countries, things are opposite as the healthcare sector is one of the prioritized sectors with a more than 10 % share of GNP per financial year.

## Cross-References

▶ Government Service Satisfaction

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# Healthcare Inequality

▶ Minority Health

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# Health-Care Organizations

▶ Health Systems

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# Healthcare Services

▶ Healthcare

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# Healthcare Structures

▶ Healthcare

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# Healthcare Systems

▶ Healthcare

## Health-Care Systems

▶ Health Systems

## Healthiness Encouragement

▶ Health Promotion

## Health-Related Quality of Life (HRQOL)

▶ Child Health Questionnaire (CHQ)
▶ Childhood Diseases and Disabilities

## Health-Related Quality of Life and Body Mass Index in England

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### Definition

▶ Health-related quality of life (HRQoL) is a multidimensional concept that usually includes self-reported measures, or "domains" of ▶ physical well-being and psychological health. It is a qualitative measure of an individual's ▶ well-being and ability to live a full and active life, assessed by means of questionnaire responses.

Body mass index (BMI) is a simple weight-for-height index used to classify underweight, normal weight, overweight, and obesity in adults (WHO, 2012). BMI is calculated by dividing an individual's weight in kilograms by the square of their height in meters (kg/m$^2$).

Overweight and obesity denote "Abnormal or excessive fat accumulation that may impair health" (WHO, 2012).

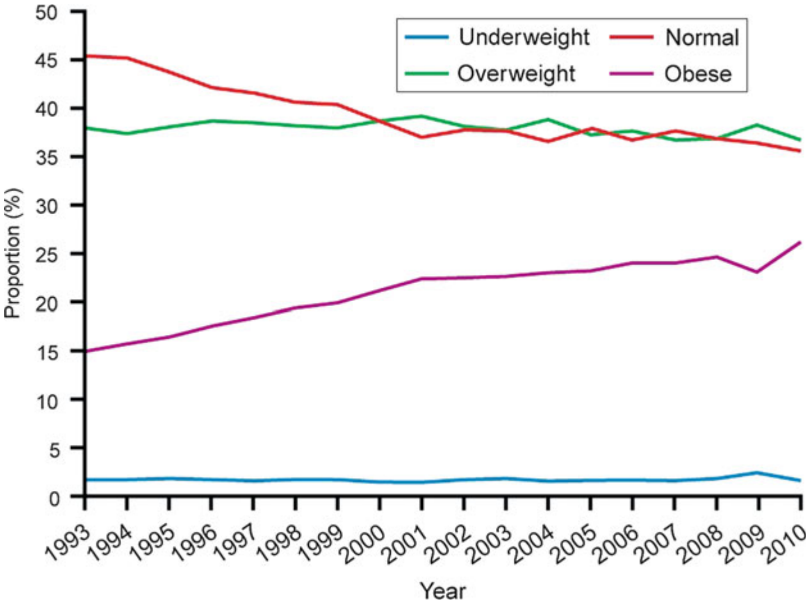
### Description

Body mass index (BMI) is a simple weight-for-height index used to classify weight status, calculated by dividing an individual's weight in kilograms by the square of their height in meters (kg/m$^2$). Table 1 details the World Health Organization (WHO) guidelines for weight categorization by BMI.

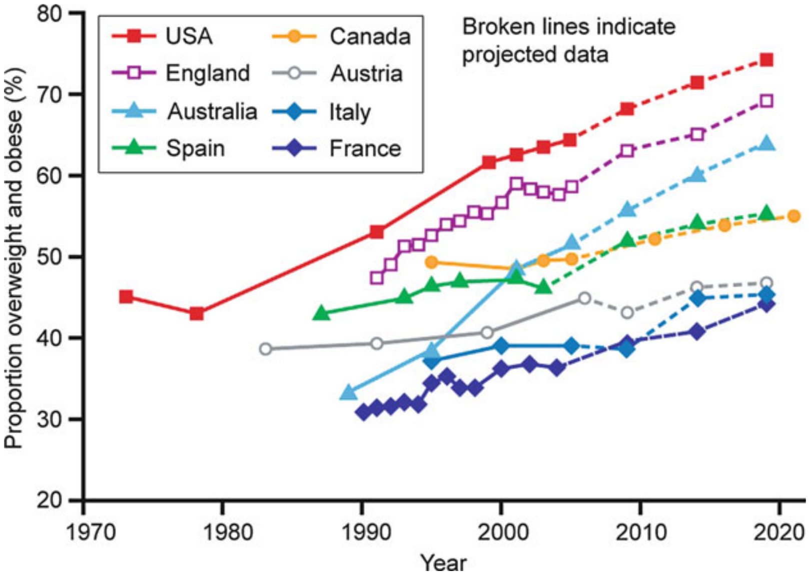
According to the Health Survey for England (HSE) 2010, just 35.6 % of the English population aged ≥16 years fall into a normal-weight BMI category (NHS, 2011). More adults (36.7 %) are overweight than normal weight, and over one quarter (26.1 %) are obese, while 1.6 % are underweight (NHS, 2011). Although the proportion of underweight adults in England has stayed relatively constant in recent years, the HSE reported an annual rise in the incidence of obesity, from 14.9 % in 1993 to 26.1 % in 2010 (accompanied by a decrease in the proportion of people of normal weight from 45.5 % to 35.6 %; Fig. 1). The incidence of obesity is projected to rise substantially: it has been predicted that, if current trends continue, 60 % of men, 50 % of women, and 25 % of children in England will be obese by 2050 (Department for Business & Skills, 2007; Sassi, Devaux, Cecchini, & Rusticelli, 2009). These statistics are consistent with the concerning global shift toward obesity (Fig. 2) (Sassi et al.). Worldwide, the incidence of obesity has more than doubled since 1980, with over 220 million men and almost 300 million women aged ≥20 years classified as obese in 2008 (WHO, 2012).

**Health-Related Quality of Life and Body Mass Index in England, Table 1** World Health Organization (WHO) guidelines for weight categorization by body mass index (BMI) (WHO, 2012)

| BMI (kg/m$^2$) | Weight status classification |
|---|---|
| <18.50 | Underweight |
| 18.50–24.99 | Normal weight |
| ≥25.00 | Overweight |
| ≥30.00 | Obese |
| 30.00–34.99 | Obese class I |
| 35.00–39.00 | Obese class II |
| ≥40.00 | Obese class III |



**Health-Related Quality of Life and Body Mass Index in England, Fig. 1** Incidence of underweight, normal weight, overweight and obesity in the Health Survey for England (HSE) from 1993–2010 (NHS, 2011). Data up to 2002 are unweighted. From 2003 onward, data are weighted for nonresponse



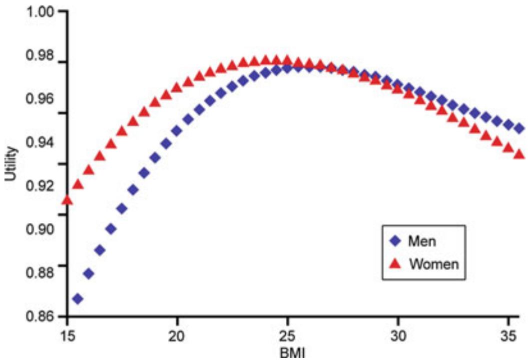
**Health-Related Quality of Life and Body Mass Index in England, Fig. 2** Incidence of overweight and obesity in selected countries from 1970 to 2020 (Sassi et al., 2009). Reproduced with permission from Sassi et al. (2009) OECD Health Working Papers, No. 45, OECD Publishing. doi:10.1787/225215402672. © OECD 2009

Overweight or obesity are associated with numerous serious comorbidities including hypertension, stroke, coronary heart disease, congestive heart failure, sudden cardiac death, sleep apnea (Poirier et al., 2006), non-alcoholic fatty liver disease (Mirza, 2011), and certain cancers (Calle & Thun 2004). Obesity is also a major risk factor for prediabetes (a state of impaired glucose homeostasis that increases the likelihood of developing type 2 diabetes) and type 2 diabetes (Knowler et al., 2002). It contributes to the development of peripheral and central insulin resistance, which can lead to pancreatic beta-cell failure and a progressive loss of glycemic control, underlying pathophysiological features of prediabetes, and type 2 diabetes (Kasuga 2006). Low BMI can also negatively affect health, increasing the risk of osteoporosis, compromised immunity, and fertility problems in women (NHS, 2010).

The comorbidities associated with excess weight contribute toward the substantially reduced life expectancy observed in overweight/obese individuals compared with normal-weight individuals. An analysis of the Framingham heart study indicated that 40-year-old females lose approximately 3 years of life if they are overweight, and approximately 7 years if they are obese, compared with 40-year-old females of a normal weight (Peeters et al., 2003).

The impact of overweight/obesity is not limited to an effect on mortality. Overweight and obesity also reduce the ability of individuals to lead full and active lives, and negatively impact upon their psychological well-being, affecting the quality of years lived. This effect can be compounded by the indirect effects of overweight/obesity-related comorbidities. In health-related quality of life (HRQoL) assessments, HRQoL is consistently found to be impaired in obese individuals, with greater impairments proportional to the magnitude of obesity (Kolotkin, Meter, & Williams, 2001). Poorer HRQoL has also been reported in underweight individuals versus normal-weight individuals (Hopman et al., 2007), although this is less well established, compared with evidence for impaired HRQoL in obesity.

Data from the HSE 2003, which had a focus on cardiovascular disease and associated behavioral risk factors, have been analyzed to investigate the relationship between BMI and HRQoL in a population of English adults (Søltoft, Hammer, & Kragh, 2009). BMI was calculated using weight and height measurements recorded by trained nurses. HRQoL information was obtained at face-to-face interviews using the EQ-5D utility measure, a questionnaire that examines five domains: ▶ mobility, self-care, usual activity, pain/discomfort, and anxiety/depression, each rated by individuals as "no problem," "some problem," or "extreme problem." Over 14,400 HSE participants aged ≥18 years were included in the analysis. After controlling for confounding factors, including gender, age, and obesity-related comorbidities, a significant association between being underweight or obese and impaired HRQoL was evident. An inverted, U-shaped relationship between BMI and EQ-5D score (HRQoL) was observed, with maximum mean HRQoL obtained at a BMI of 26.0 kg/m$^2$ in men and at a BMI of 24.5 kg/m$^2$ in women, i.e., at a BMI close to 25 kg/m$^2$ (Fig. 3).



**Health-Related Quality of Life and Body Mass Index in England, Fig. 3** Estimated relationship between body mass index (BMI) and EQ-5D score after controlling for confounding factors. Reproduced from Søltoft et al. (2009) Qual Life Res 18:1293–1299, Creative Commons Licence

Underweight men reported increased problems with self-care, usual activities, pain/discomfort, and anxiety/depression compared with men of a normal weight (Table 2). Underweight women reported reduced mobility in addition to impaired self-care, usual activities, and increased anxiety/depression versus women of a normal weight (Table 2). In both men and women, overweight and obesity adversely affected all domains of the EQ-5D except for anxiety/depression, having the greatest impact on the mobility domain (Table 2). The results of this study indicate that HRQoL is reduced in English populations with excessively low or high BMI, and highlight that maintaining a normal BMI is important not only for reducing the risk of comorbidities, but also for maximizing HRQoL. The number of EQ-5D responders in the underweight and obese groups was relatively low in this study, however. Additional studies of HRQoL in underweight and in very obese patients (BMI >35 kg/m$^2$) would therefore be

**Health-Related Quality of Life and Body Mass Index in England, Table 2** The proportion of individuals reporting “some problem” or “extreme problem” with the five dimensions of the EQ-5D questionnaire (Søltoft et al., 2009)

| Dimension | Individuals reporting “some problem” or “extreme problem” (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | BMI | | BMI | | BMI | | BMI | | BMI | |
| | <18.50 | | 18.50–24.99 | | 25.00–29.99 | | 30.00–39.99 | | ≥40.00 | |
| | Men | Women | Men | Women | Men | Women | Men | Women | Men | Women |
| Mobility | 11.3 | 20.6 | 11.1 | 10.1 | 14.6 | 17.2 | 21.8 | 28.0 | 30.5 | 35.4 |
| Self-care | 7.6 | 7.6 | 3.0 | 2.6 | 3.3 | 3.5 | 4.5 | 5.7 | 10.2 | 9.8 |
| Usual activity | 20.8 | 15.9 | 11.7 | 11.2 | 12.2 | 15.1 | 18.3 | 22.0 | 20.3 | 22.6 |
| Pain/discomfort | 28.3 | 25.5 | 24.4 | 25.4 | 27.3 | 35.2 | 36.9 | 44.4 | 40.7 | 48.0 |
| Anxiety/depression | 28.3 | 31.1 | 15.6 | 21.3 | 14.5 | 20.4 | 16.6 | 23.8 | 10.2 | 30.6 |

instructive. Furthermore, although this study uncovered a clear association between HRQoL and BMI in an English population, it did not allow the direction of causality to be determined. Longitudinal population studies are therefore required to confirm a causal effect of BMI on HRQoL. Such studies could also give further insights into differences between certain population subgroups.

Another analysis of the HSE, using data from 2003 to 2006, has also demonstrated reduced EQ-5D scores with obesity (Minet Kinge & Morris, 2010). Interestingly, the negative impact of overweight and obesity on HRQoL was found to be greater in individuals from lower socioeconomic status (SES) groups compared with individuals of the same weight from higher SES groups (Minet Kinge & Morris, 2010).

Consistent with HRQoL being impaired at excessively low or high BMIs in English populations, a relationship between BMI and health utility (SF-12) similar to that found by Søltoft and colleagues (see Fig. 3) has been reported in an analysis of 5608 individuals in the Scottish Health Survey (Ul-Haq, Mackay, Fenwick, & Pell, 2012). Reduced HRQoL has also been reported in underweight and overweight or obese Canadians women in particular (Hopman et al., 2007), indicating that this finding extends beyond English populations, and is a more global observation.

If the prevalence of overweight and obesity in the UK, and globally, continues to rise as predicted, an accompanying significant decrease in HRQoL could occur, as the burden of weight and obesity-related problems with mobility, self-care, activity, and pain/discomfort increases.

However, encouragingly, there is evidence to suggest improvement in HRQoL following weight loss, encompassing data from studies of different populations and weight-loss strategies. In 135 obese Serbian adults, mean weight loss of ~12 % achieved through dieting led to improvements in all domains of the IWQOL-Lite HRQoL measure, which encompasses ▶ physical function, ▶ self-esteem, sexual life, public distress, and work (Vasiljevic, Ralevic, Kolotkin, Marinkovic, & Jorga, 2012). In 8296 obese German patients, a lifestyle intervention program, comprising a 12-week low-calorie diet, nutritional education, and increased physical activity, yielded improvements in physical functioning, general health, vitality, and mental health domains. These benefits were sustainable, being apparent even 3 years after the start of the program (Bischoff et al., 2012). Consistent with this finding, morbidly obese patients who underwent laparoscopic adjustable gastric banding in a Finnish hospital experienced increases in HRQoL that were maintained for 5 years postoperatively (Helmiö, Salminen, Sintonen, Ovaska, & Victorzon, 2011). Data from a 2-year, randomized, placebo-controlled trial conducted by the European Orlistat Obesity Study Group indicate that medications that promote weight loss can also improve HRQoL. In this study, 159 patients who received orlistat (120 mg) three times daily experienced a mean (SD) weight loss of 7.8 ± 6.9 % ($p$=0.002 vs. placebo), and reported significantly less overweight distress than 139 patients who received placebo ($p<0.05$; Rössner, Sjöström, Noack, Meinders, & Noseda, 2000). In a randomized clinical trial of 564 obese European adults without diabetes, the addition of liraglutide (1.2–3.0 mg once daily), orlistat (120 mg three times daily), or placebo to dietary therapy and exercise led to average weight loss (−3.8 to −7.8 kg with liraglutide, −3.9 kg with orlistat, and −2.0 kg with placebo, after 1 year) that was associated with HRQoL improvements 1 and 2 years after intervention (assessed by IW-QOL-Lite) (Astrup et al., 2011).

## Summary

There is a shift away from normal weight toward overweight and obesity in England, consistent with current global trends. Overweight and obesity are life-shortening conditions, associated with numerous serious comorbidities, including cardiovascular disease and type 2 diabetes. Underweight, the incidence of which has remained relatively low and constant in recent years, is also associated with health problems. Analyses conducted using data from the HSE have shown that HRQoL is compromised at both excessively high and excessively low BMI, with maximum mean HRQoL observed at a BMI of approximately 25 kg/m$^2$. These studies highlight that the importance of maintaining a normal BMI reaches beyond reducing the risk of comorbidities, to maximizing HRQoL. Encouragingly, obese patients experience improvements in HRQoL following weight loss. Effective weight management strategies could, therefore, reduce the health and socioeconomic burden of overweight/obesity. Future studies should confirm the causal relationship between excessively low or high BMI and impaired HRQoL, examine the relationship in different subgroups, and assess the relative efficacy of different weight-loss interventions.

**Acknowledgments** The authors thank Watermeadow Medical, UK (supported by Novo Nordisk, Søborg, Denmark) for editorial assistance.

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# Health-Related Quality of Life and Habitual Physical Activity among Older Japanese

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## Synonyms

Habitual physical activities in the elderly

## Definition

### Health-Related QOL

Health-related QOL is a broad, multidimensional concept that typically includes self-reported measures of physical and mental health and function in relation to the individual's environment, for example, health risks and conditions, functional status, social support, and socioeconomic status. Depending on how close-knit and senior-friendly a community may be, a decline in physical and mental health and a progressive loss of social contacts conspire to limit the range of environmental experience of the senior citizen, leading to a progressive decline in health-related QOL. Questions about perceived physical and mental health and function thus have become an important component of health surveillance programs and are generally considered valid indicators of service needs and intervention outcomes. Self-assessed ▶ health status has also proved to be a powerful predictor of morbidity and mortality, comparable with many more objective measures of health such as maximal aerobic power and preferred and maximal walking speeds.

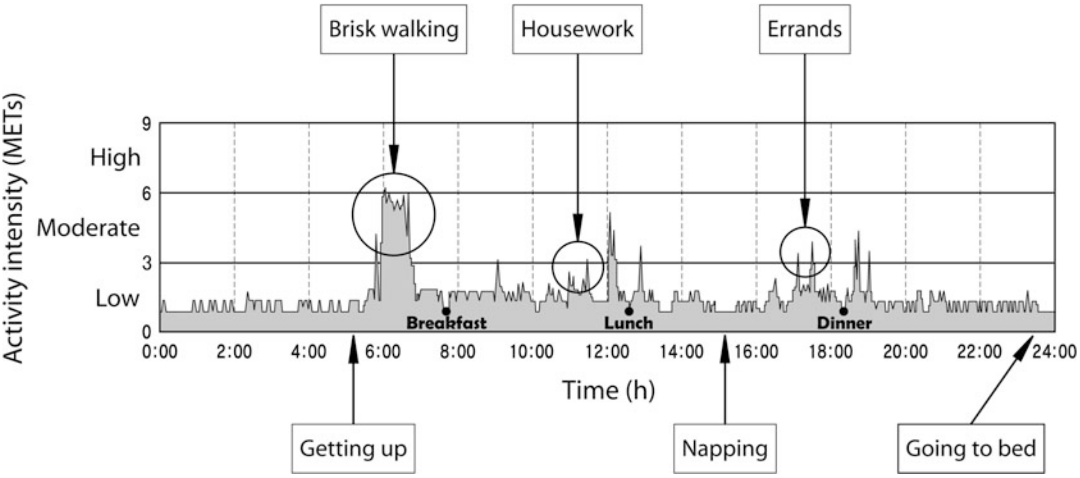
### Habitual Physical Activity

Habitual physical activities considered in the present context are those involving the large muscle groups of the musculoskeletal system, including pursuits such as walking, running, and cycling as well as ▶ gardening and any domestic or employment-related pursuit that demands a similar muscular output. Physical activities are commonly rated according to two essential benchmarks: their intensity, often rated as low, moderate, or high (Fig. 1), and their duration. Physical activity is a more generalized and less structured concept than exercise; the latter is a planned form of physical activity, undertaken with the specific intent of improving physical fitness or performance, preventing disease, or facilitating rehabilitation.

## Description

### The Nakanojo Study

Since 2000, we have been conducting an interdisciplinary investigation on the habitual



**Health-Related Quality of Life and Habitual Physical Activity among Older Japanese, Fig. 1** A typical example of the daily physical activity patterns of an elderly person, as seen in 24-h step count recordings from the Nakanojo Study (Reproduced from Aoyagi and Shephard [2009c], with permission from Adis, a Wolters Kluwer business © Adis Data Information BV, 1996. All rights reserved). *METs* metabolic equivalents

physical activity and many measures of health (including health-related QOL) of elderly people living in Nakanojo, Gunma, ▶ Japan. Details of this investigation have been published previously (Aoyagi, 2011; Aoyagi & Shephard, 2009a, b, c, d, 2010, 2011, 2013). In brief, the test site, Nakanojo, is a medium-sized rural Japanese town, located about 150 km northwest of Tokyo. Data from the National Census of 2007 show a total population of 17,491 (8,501 men and 8,990 women); 29.1 % of these are aged ≥65 years (25.7 % of men and 32.3 % of women). In principle, elderly Japanese people are protected by a substantial social safety net, including a public pension plan, national health insurance, and a public nursing care insurance scheme. Many older Nakanojo residents are also members of an extended family network, thus receiving much more ▶ family support than their counterparts who live in Tokyo or the other large cities of developed nations. In contrast, public transportation in Nakanojo is very limited so that most people must travel either on foot or by private vehicle; bicycle use is uncommon in this population at this age. Our subjects included all willing community residents ≥65 years of age with the exception of those who were severely demented or bedridden (giving a sample of some 5,000 participants). All participants completed a conventional questionnaire on physical activity (Yasunaga et al., 2007) and health-related QOL (Fukuhara & Suzukamo, 2011) once a year, and in an arbitrarily selected age- and sex-matched subgroup, about a tenth of the total sample, physical activity was assessed continuously for 24 h per day for >10 years using a specially adapted uniaxial pedometer/accelerometer (modified Kenz Lifecorder; Suzuken Co., Ltd., Nagoya, Aichi, Japan). To date, the primary aim of the Nakanojo Study has been to establish the overall patterns of physical activity most closely associated with good health in the elderly. In addition to household chores (very few of our sample have domestic help), the main physical activities are walking and occasional sports such as gateball (Japanese croquet) and ground golf (golf-like sport for elderly Japanese people), and in those living away from the center of town, small-scale agriculture such as rice growing.

## Health-Related QOL Measurements

Health-related QOL was assessed in July 2000 and every June of 2001–2011. For this purpose, we opted to use a validated Japanese-language version of the medical outcomes study 36-item short-form health survey (SF-36) questionnaire

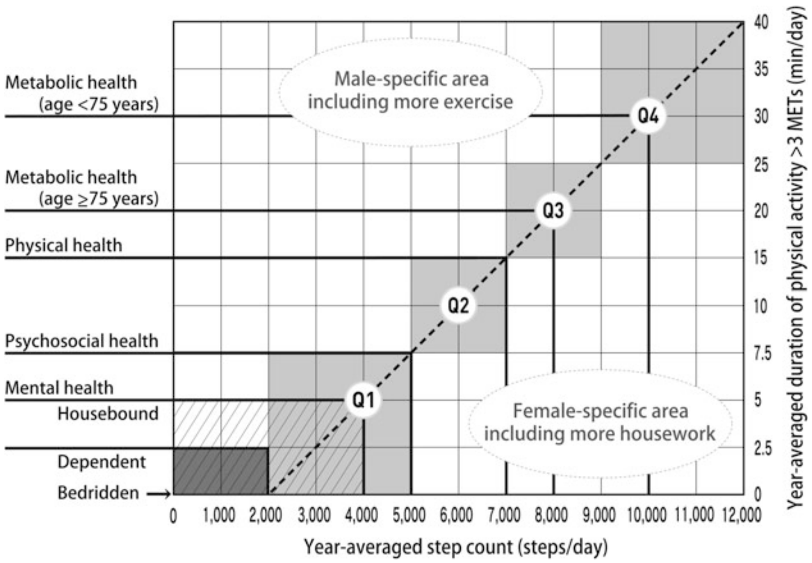
(Fukuhara & Suzukamo, 2011), rather than a more global index such as the World Health Organization's WHOQOL-100 or its shorter homologue the 26-item WHOQOL-BREF (Skevington, Lotfy, O'Connell, & WHOQOL Group, 2004). In brief, the instrument that we used asks 36 questions about the preceding 4 weeks, assessing eight dimensions of health status: physical functioning (PF), role limitations due to problems of physical health (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role limitations due to problems of emotional health (RE), and mental health (MH). Potential scores on each dimension range from 0 (poor health) to 100 (good health). The original algorithm for calculation of the overall health-related QOL did not prove well suited to Japanese populations; correlations between some scales and the principal components of questionnaire responses differed from those seen in the United States (Fukuhara, Bito, Green, Hsiao, & Kurokawa, 1998; Fukuhara, Ware, Kosinski, Wada, & Gandek, 1998; McHorney, Ware, & Raczek, 1993; McHorney, Ware, Lu, & Sherbourne, 1994; Ware & Sherbourne, 1992). Thus, the overall QOL score was calculated as a simple average of values for the eight relevant individual SF-36 dimensions.

## Habitual Physical Activity Measurements

Details of the electronic pedometer/accelerometer (modified Kenz Lifecorder) that was used in our study, including the ▶ reliability and validity of data for this age group, have been documented previously (Shephard & Aoyagi, 2009, 2010, 2012). In brief, the device (attached to a waist belt) makes simultaneous measurements of the number of steps taken and the intensity of physical activity every 4 s. A step is recorded when the instrument detects an acceleration greater than an amount preset by a filter; the absolute intensity of each impulse (expressed in metabolic equivalents [METs]) is also recorded. Participants wore the device continuously between July 2001 and June 2011. The memory of the instrument allows storage of data for ≥36 days. Monthly visits to the Nakanojo Public Health Center allowed data retrieval and battery replacement within the space of a few minutes. Subject compliance with the requirement to wear the monitor continuously was good, participants removing the instrument for intervals >3 h on <5 % of days (Aoyagi & Shephard, 2013). After exclusion of such data, a computer processor summarized daily step counts and the periods per day and proportions of total activity spent at intensities <3 and >3 METs.

## Relative Importance to Health-Related QOL of Light and Moderately Vigorous Physical Activity

We here consider the cross-sectional relationship between an objective measurement of a person's physical activity as recorded from July 2002 through June 2003 and his or her health-related QOL as reported in June 2003. Our data indicate that health-related QOL (Yasunaga et al., 2006), along with many other measures of physical and mental health (Aoyagi, Park, Watanabe, Park, & Shephard, 2009; Aoyagi, Park, Kakiyama, Park, Yoshiuchi, & Shephard, 2010; Park et al., 2007, 2008; Park, Park, Shephard, & Aoyagi, 2010; Yoshiuchi et al., 2006), is related to both step count and the duration of moderately vigorous physical activity (Fig. 2). In men, the degree of health, particularly health-related QOL (Yasunaga et al.) and bone health (Park et al., 2007), is associated more closely with the daily duration of physical activity >3 METs than with the daily step count, whereas in women, the reverse is true. In many of the elderly that we tested, large fractions of the daily step count reflected minor movements (at an intensity <3 METs) rather than deliberate walking (Yasunaga et al., 2008). Our observations suggest that in Nakanojo, the typical elderly woman (and the elderly man if his wife's health is failing) spend long periods performing low-intensity household chores (Yasunaga et al., 2007). Given that in this age group, the volume of such low-intensity effort still has a positive association with various health outcomes including health-related QOL, it may be important to encourage seniors to engage in regular physical activity, even if they can only attain low intensities of effort for much of the time that they are active.



**Health-Related Quality of Life and Habitual Physical Activity among Older Japanese, Fig. 2** Schematic diagram showing categories of habitual physical activity in elderly Japanese people and the relationships between such activity patterns and various components of good health, based on data from the Nakanojo Study (Reproduced from Aoyagi and Shephard [2009c], with permission from Adis, a Wolters Kluwer business © Adis Data Information BV, 1996. All rights reserved). *METs* metabolic equivalents, Q1–Q4 = first through fourth quartiles of physical activity in study participants (n = about 50 for each quartile)

## Physical Activity Thresholds for Higher Health-Related QOL and Other Specified Health

Most authors recognize that for the elderly, any level of physical activity is better than none. Nevertheless, the relationships demonstrated in the Nakanojo Study (Aoyagi et al., 2009, 2010; Park et al., 2007, 2008, 2010; Yasunaga et al., 2006; Yoshiuchi et al., 2006) suggest that health benefits of statistical and clinical significance are not observed unless certain minimum levels of habitual physical activity are maintained (Fig. 2). In both sexes, the thresholds of step count and/or duration of physical activity at an intensity >3 METs associated with the absence of specific health problems are relatively low for health-related QOL: >4,000 steps/day and/or >5 min/day for better mental health including a lower depression score (Yoshiuchi et al., 2006); >5,000 steps/day and/or >7.5 min/day for better psychosocial health including a greater health-related QOL (Yasunaga et al., 2006); at least 7,000–8,000 steps/day and/or at least 15–20 min/day for a lesser likelihood of aortic arteriosclerosis (Aoyagi et al., 2010), osteoporosis (Park et al., 2007), and sarcopenia (Park et al., 2010) and a greater level of physical fitness (particularly lower-extremity strength and gait speed in ≥75-year-old adults; Aoyagi et al., 2009); and >8,000 steps/day and/or >20 min/day and >10,000 steps/day and/or >30 min/day for better metabolic health, including a lower risk of hypertension and hyperglycemia, in adults aged ≥75 and <75 years, respectively (Park et al., 2008).

## Physical Activity Thresholds Associated Most Closely with Greater Health-Related QOL

In the Nakanojo Study, we saw significant positive associations between the daily step count, the daily duration of physical activity >3 MET, and the overall health-related QOL as assessed by the SF-36 scale (Fig. 2). Higher health-related QOL scores, seen in the more active men and women, were distributed fairly evenly across the eight SF-36 domains (Yasunaga et al., 2006).

Within the limits of our data, it appeared that health-related QOL plateaued at surprisingly low levels of physical activity, corresponding to the second quartiles (Q2) of our sample in terms of both step count (5,500 steps/day for men and 4,500 steps/day for women) and duration of activity >3 METs (8.5 min/day for men and 6.5 min/day for women). After covarying our data for age, the overall health-related QOL in both men and women was substantially higher (>10 units) in the second through fourth quartiles (Q2-Q4; SF-36 = around 80–90) than in the first quartile (Q1; SF-36 = around 70) of physical activity, whether classified by step count or the duration of activity >3 METs. Furthermore, the health-related QOL score was greater in elderly individuals who, at any given step count, undertook a larger proportion of their total daily activity at an intensity >3 METs (i.e., those who fell on or above the dotted line in Fig. 2; Aoyagi, Park, Park, & Shephard, 2010). The extent of participation in activity >3 METs was associated with both physical and mental dimensions of the SF-36. This was particularly true for dimensions that were directly related to perceived physical and mental health (PF, BP, VT, and MH) rather than for those that were related to role limitations (RP and RE), social aspects (SF), and general perceptions (GH).

### Limitations of the Study

As in any experimental setting, our observations are limited by a recruitment bias that tended to favor healthy members of the community. However, the extent of such bias was likely small, since the mean step counts for our sample matched figures observed when a similar technology was applied to a larger and more representative sample of healthy Japanese adults in an equivalent age group; mean 1-day pedometer counts for the larger sample were approximately 7,500 and 6,500 steps/day in men and women, respectively (Japan Ministry of Health, Labour, & Welfare, 2003). Moreover, although no ceiling effect was seen for the overall SF-36 score (about 80 ± 15 for pooled male and female data), there was a trend of this type in half of the eight constituent dimensions (PF, RP, SF, and RE); this reflects the fact that the majority of subjects were relatively healthy for their age. Our subjects were Japanese, but there is no a priori reason to suggest that findings would differ for other ethnic groups of similar age and living in circumstances similar to those that we have described for the Nakanojo community. Perhaps the most important limitations of our data are that our analyses to date were cross-sectional and semi-cohort in type, with evaluations of both health and functional status being made following the year of activity measurement. The causality and direction of relationships between physical activity patterns and health-related QOL thus remain to be explored through a prospective cohort study and a randomized controlled trial.

## Conclusions

Data from the Nakanojo Study suggest that elderly individuals should be encouraged to meet minimum standards of habitual physical activity, in part because of its association with health-related QOL. Nevertheless, the cause-and-effect direction of the relationship between habitual physical activity and health-related QOL cannot be inferred from a cross-sectional study such as provided by our analyses to date, and it is conceivable that people with low health-related QOL scores might be inactive because of poor health. Thus, we recommend conducting a longitudinal study (both observational and interventional), using more elderly participants and including frailer individuals who are unable to live independently, in order to give a more definitive interpretation of the present findings.

## Cross-References

▶ Health Risk Conditions
▶ Mortality
▶ Physical Activity
▶ Sports Activities

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# Health-Related Quality of Life and Inflammatory Bowel Disease

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## Synonyms

Cleveland Clinic IBD Scale; Crohn’s disease; Inflammatory Bowel Disease Questionnaire (IBDQ); Rating Form of IBD Patient Concerns (RFIPC); Ulcerative colitis; Ulcerative Colitis and Crohn’s Disease Health Status Scales (UC/CD HSS)

## Definition

Inflammatory bowel diseases include Crohn’s disease (CD), ulcerative colitis (UC), and inflammatory bowel disease unclassified, a disease with features of both CD and UC. These are chronic inflammatory gastrointestinal diseases of unknown etiology, characterized by episodes of remissions and relapses. The peak incidence of IBD occurs in 15–25 years of age, and 30 % of the patients are diagnosed before age 21 (Karwowski et al., 2009; Stenson, 2008).

As UC affects the rectum and a variable extent of the colon, CD can involve any part of the gastrointestinal track. In UC, the most pronouncing symptoms are diarrhea that is often associated with rectal bleeding and abdominal cramping during bowel movements. Systemic symptoms, such as weight loss, fever, tachycardia, nausea, and vomiting, are features of severe attack of UC. In CD, diarrhea is a frequent symptom, and abdominal ▶ pain and weight loss are common before diagnosis. Fistulas occur in about 20 % of CD patients, and their cumulative incidence increases with duration of the disease. Extraintestinal manifestations such as cutaneous, ocular, and hepatobiliary manifestations and arthropathies are also frequent in IBD. In children, IBD can cause delayed puberty and growth failure. The life expectancy of patients with CD is slightly reduced (Baumgart & Sandborn, 2007; Stenson, 2008).

The most frequently used medications for IBD are aminosalicylates, corticosteroids, immunomodulators, and biological medications that aim to decrease inflammatory activity of IBD and maintain remission. Despite new therapies, cumulative surgery rate remains high. Indications for colectomy in UC are active colitis not responding to therapy and dysplasia or cancer of the colon. In CD, surgery is not curative but may be necessary for disease-related complications and emergencies, such as perforation or intestinal obstruction, or for the control of symptoms when medical therapy fails. After 10 years, colectomy rate in UC is about 24 %, whereas most patients with CD have undergone surgery after 20 years from diagnosis. Disease recurrences are frequent after surgical therapy of CD (Baumgart & Sandborn, 2007).

Patients with IBD are at increased risk of many autoimmune diseases, pulmonary diseases, and thromboembolic conditions (Haapamäki, 2011). Furthermore, psychological comorbidity, mainly ▶ anxiety and depression, is present in IBD more often than in the general population, and they are related to frequency of disabling symptoms. Patients with active IBD report higher levels of ▶ distress than do inactive patients or the general population, but increased levels of ▶ anxiety, depression, and ▶ distress have been found in inactive IBD patients, as well (Graff et al., 2009; Haapamäki, 2011).

### Health-Related Quality of Life and IBD

The clinical symptoms of IBD often lead to various forms of emotional ▶ distress that can have a negative impact on overall ▶ quality of life. The young age at onset of the disease and recurrent, chronic nature of the disease make health-related quality of life (HRQoL) measurement particularly important in IBD (Cohen, 2002).

HRQoL has been extensively examined in adult inflammatory bowel disease (IBD) patients, but fewer instruments and less data for estimating HRQoL in children and adolescents with IBD are available.

## Description

### Disease-Specific HRQoL Instruments in IBD

The most commonly used disease-specific HRQoL instrument in IBD, translated to over 40 languages, is the Inflammatory Bowel Disease Questionnaire, IBDQ (Guyatt et al., 1989). The questionnaire consists of 32 questions and has four domains: gastrointestinal symptoms, systemic symptoms, emotional function, and social function, with each comprising 5–12 items. Responses are graded on a 7-point ▶ Likert scale, with 7 referring to no problems at all on that field and 1 to very severe problems. The total score, ranging from 32 to 224, is calculated by summing all the answers to the 32 questions. Average scores per item for each domain (range 1–7) can also be utilized. The questionnaire has been validated, and it is sensitive to change in IBD patients (Guyatt et al., 1989). Available also is a 10-question short-form IBDQ (SIBDQ) developed for clinical use and a version designed for stoma patients.

The Rating Form of IBD Patient Concerns (RFIPC) was developed to evaluate IBD patients' disease-related worries and concerns. The 21-item questionnaire is self-administered. Patients rate their IBD-related concerns from 0 to 100 on a visual analogue scale (VAS), and the total score is the average of all answers (Drossman et al., 1989). This instrument is most feasible in guiding patient education and counseling because of its focus on patient concerns, but it has been used in HRQoL studies, as well (Yacavone et al., 2001).

The Cleveland Clinic IBD Scale was developed for use in ambulatory IBD patients. Of its 47 items 45 are scaled and two require descriptive answers. The questionnaire comprises four categories: functional/economic, social/recreational, affect/life in general, and medical/symptoms. The questionnaire has not yet been fully validated (Yacavone et al., 2001).

Ulcerative Colitis and Crohn's Disease Health Status Scales (UC/CD HSS) is a self-administered instrument that focuses on measuring severity of IBD symptoms, psychological distress, psychosocial functioning, and health care use. Two separate indices can be calculated: the Diarrhea Index and the Other GI Symptoms Index. These indices have been shown to correlate with health states (Yacavone et al., 2001).

### Generic HRQoL Instruments

Of generic HRQoL instruments, ▶ Sickness Impact Profile (SIP), 36-Item Short-Form Survey Instrument (▶ SF-36), EuroQol (EQ-5D), 15D, ▶ Quality of Well-Being Scale (QWB), ▶ Medical Outcomes Study Short Form (MOS-24 and MOS-36), ▶ Quality of Life Index (QLI), and Health Utilities Index (HUI) have been used for assessing HRQoL in IBD. Several instruments measuring psychological functioning or ▶ distress have been utilized, as well (Yacavone et al., 2001).

### HRQoL Instruments for Pediatric IBD Patients

The IMPACT questionnaire is a disease-specific, validated, self-administered questionnaire yielding six domains (bowel, body image, functional, social and emotional impairment, tests and treatments, and systemic impairment). The most recent version of the questionnaire, Impact III, includes 35 questions with a 5-point ▶ Likert scale for response options. The scores range from 0 to 231, and higher scores indicate better quality of life. The IMPACT is most suitable for patients aged 10–17 with established IBD (Griffiths et al., 2005). For smaller children, HRQoL tools utilizing computer animated programs have been developed.

Of generic HRQoL instruments designed for children, for example, ▶ PedsQL, the TNO-AZL Children's Quality of Life questionnaire, 16D and 17D have been used in children with IBD.

### Concerns and Worries of IBD Patients

The most intense concerns of IBD patients are the uncertainty of the disease course, the effects of medication, impact of disease on energy level, risk for having surgery or an ostomy bag, being a burden on others, loss of bowel control, and risk for developing cancer. In CD, concerns about energy level, being a burden on others, achieving full potential, having pain, and financial costs are more pronounced than in UC, whereas UC patients have more concerns of developing cancer or other complication of the disease. Females are generally more concerned about issues associated with the body image, and younger individuals are more worried about impact of the disease on sexual intimacy (Drossman et al., 1991).

### Comparison of HRQoL with General Population and Other Disease Groups

HRQoL appears generally to be worse in IBD patients than in healthy controls, although physical functioning may be similar. However, some studies have shown no difference between IBD patients in remission and general population (Cohen, 2002; Haapamäki, 2011). HRQoL is similar to or better than that of patients with many other medical disorders (rheumatoid arthritis, chronic obstructive pulmonary disease, back pain, chronic pain, and hemodialysis) (Cohen, 2002). In a referral center setting, impairment of HRQoL and ▶ psychological distress was similar in ▶ irritable bowel syndrome (IBS) and IBD (Pace et al., 2003).

The 15D has been used in IBD patients earlier in a population-based survey measuring the impact of various chronic conditions on 15D and EQ-5D scores in a sample of citizens over 30 years of age. The respondents were matched for age, sex, income, education, marital status, and other chronic conditions. IBD patients achieved better scores than did patients with, for example, diabetes, urinary incontinence, rheumatoid arthritis, Parkinson's disease, and macular degeneration. Patients with psoriasis, migraine, loss of hearing, or disturbing allergy had higher scores than did IBD patients (Saarni et al., 2006).

### Factors Associated with HRQoL

Disease severity and activity are the most important determinants of HRQoL (Irvine et al., 1994). Need for hospitalization reflects disease activity and is associated with lower HRQoL scores (Casellas et al., 2002).

In many surveys, patients with CD have HRQoL scores similar to or worse than those of UC patients (Cohen, 2002). However, after severity of disease has been taken account for, many surveys show no significant differences in HRQoL between UC and CD patients (Haapamäki, 2011). In many surveys, increasing age is associated with lower HRQoL. On the other hand, longer disease duration may predict better HRQoL at least in some IBD groups (Haapamäki, 2011).

Males have better HRQoL scores in most, but not all, surveys. Impact of educational level on HRQoL is somewhat controversial. Coexisting diseases and symptoms have been shown to impair HRQoL in IBD (Haapamäki, 2011). This is evident especially for rheumatic symptoms and noninflammatory joint pain which are common in IBD (Haapamäki, 2011).

Psychological factors and disorders are strongly associated with perceived health in IBD, even when IBD activity is controlled for (Graff et al., 2009).

During the development of IBDQ, ambulatory patients were asked about their problems related to IBD. Frequent or loose stools, abdominal pain, and rectal bleeding were rated as the most disturbing symptoms by the patients. Furthermore, patients experienced constitutional symptoms, such as ▶ fatigue, sleeping difficulties, and problems in maintaining weight, as more disturbing than emotional problems (irritability, anger, and depression) or social problems (Mitchell et al., 1988).

## Impact of Surgery on HRQoL

Patients who have undergone surgery for CD report worse HRQoL than do nonsurgical CD patients. In patients with active CD, HRQoL appears to improve in the immediate postoperative period, but not in the long term. This is consistent with the natural history of Crohn's disease, as postoperative recurrences are frequent (Cohen, 2002).

In UC, several studies have concluded that HRQoL in colectomized patients is similar to that in the general population, but many report either minimal change in general postoperative HRQoL or HRQoL lower than that of the general population (Haapamäki, 2011). In patients with severe UC who have extremely poor HRQoL before surgery, HRQoL usually improves postsurgically. However, HRQoL is strongly related to surgical outcome. In UC patients who have undergone colectomy and ileal pouch-anal anastomosis (IPAA) surgery, HRQoL depends highly on pouch function, and patients with poor pouch function or pouch failure have significantly lower HRQoL than do those with good pouch function (Berndtsson et al., 2007). After surgery, many UC patients suffer from frequent or nocturnal bowel movements, intermittent perianal soreness, and need of antidiarrheal medication (Öresland et al., 1989).

In a large European survey, two-thirds of patients (both UC and CD) rated their quality of life after surgery as greatly improved. Still, after surgery, 65 % of patients reported recurrence of symptoms, and 58 % reported postoperative complications (Haapamäki, 2011). Many patients with a permanent ileostomy after surgery have HRQoL scores comparable to those of the general population, but impairment of HRQoL and problems with body image are observed frequently, as well (Haapamäki, 2011).

## Medication

HRQoL evaluations of most drugs commonly used for IBD are available. Mesalamine has been shown to improve HRQoL significantly in mildly and moderately active UC (Irvine et al., 2008). Use of immunomodulators is associated with a better HRQoL, while use of corticosteroids has a negative impact on HRQoL in CD. Corticosteroids are used usually for relapses and for active disease states, which partly explains the poor HRQoL of patients receiving those medications.

Several placebo-controlled trials have shown statistically significant improvement in HRQoL scores of patients receiving mesalamine, biological medications, ciclosporin, methotrexate, and budesonide for IBD (Cohen, 2002; Haapamäki, 2011).

## HRQoL in Pediatric IBD Patients

Recent surveys have shown impaired HRQoL in children and adolescents with IBD compared to healthy peers (Karwowski et al., 2009). Elevated risk for psychosocial, physical, and education-related problems has also been reported. There is some evidence that patients with higher disease activity, those experiencing steroidal side effects, adolescents (versus younger children), and boys may be at particular risk for impaired HRQoL ((Kunz et al., 2010). Children with IBD are more prone to emotional and psychosocial problems and report more ► fatigue than healthy controls. Although disease activity and lower HRQoL are usually associated, impairment of behavioral and emotional functioning does not always correlate with disease activity scores. In a survey using the IMPACT questionnaire, the majority of pediatric IBD patients reported significant improvement in HRQoL as well as in disease severity in the year after diagnosis (Otley et al., 2006). No differences in total HRQoL scores were documented between adolescents with IBD and adolescents with other chronic or acute illnesses, but those with IBD had significantly lower total HRQoL scores than healthy youth, measured with the ► PedsQL (Kunz et al., 2010).

Several pediatric studies have found that adolescents with symptomatic IBD are more likely to express psychosocial difficulties. Like other chronic diseases of childhood, IBD increases risk for depression, ▶ anxiety, social isolation, altered self-image, family conflict, and school absences in children and adolescents (Karwowski et al., 2009).

### Strategies to Improve HRQoL in IBD

The goal of medical management of IBD is to induce and maintain clinical remission and to reduce symptoms, which in turn, should lead to reduced psychosocial ▶ distress and better ▶ quality of life.

According to results of a Cochrane database systematic review, general application of psychological therapy in adult patients with IBD did not appear useful, whereas adolescents with IBD may benefit from psychological treatment. In adults, the need of psychological interventions should be assessed, and psychotherapy, stress-management programs, or educational training should be offered on an individual basis (Timmer et al., 2011). The most favorable effects have been evident with cognitive behavioral therapy (CBT), which appeared to reduce ▶ anxiety and depression levels significantly in IBD patients. Several studies have concluded that ▶ social support is beneficial with respect to coping and stress management, as well as improving HRQoL in patients with IBD. Participating in a stress-management group had significant improvement in CD activity and psychosocial functioning compared to a control group (Karwowski et al., 2009).

Lifestyle modification programs, group-based education programs, or offering disease-related information in the form of educational booklets have not improved HRQoL, or the effect has been of short duration (Haapamäki, 2011).

In adolescents, results from psychotherapy are more positive than in adults. In depressed youth with IBD, those receiving CBT with focus on illness perception experienced significant improvement in depression and perceived control over IBD compared to those receiving their usual medical treatment. This was seen independent of IBD severity. Cognitive reappraisal and developing interest in activities that can exist within the limitations of their disease process was found to be helpful to adolescents. ▶ Social support from other adolescents with IBD can also be valuable (Karwowski et al., 2009).

## Cross-References

- ▶ Anxiety
- ▶ Childhood Diseases and Disabilities
- ▶ Disease-Specific Questionnaire
- ▶ Distress
- ▶ Fatigue
- ▶ Health-Related Quality of Life
- ▶ Irritable Bowel Syndrome
- ▶ Likert Scale
- ▶ Medical Outcomes Study (MOS) 36-Item Short Form Health Survey
- ▶ Pain
- ▶ PEDsQL
- ▶ Quality of Life
- ▶ Quality of Well-Being (QWB) Scale
- ▶ Sickness Impact Profile (SIP)
- ▶ Social Support

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# Health-Related Quality of Life for Visually Impaired Older Chinese Adults

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## Synonyms

Vision loss; Visual functioning

## Definition

According to the World Health Organization (WHO), the term "impairment" is defined as "any loss or abnormality of psychological, physiological or anatomical structure or function in the context of health experience" (World Health Organization [WHO], 1980). Therefore, impairment is a measurable loss or departure of functional capability, which is outside the normal range. Vision impairment refers to all degrees of vision loss and is both functionally based and measurement based. It is a measurable loss of visual function in psychophysical measurement. Clinically, visual function is often measured in terms of visual acuity, sometimes with additional criteria for visual field, color vision, and contrast sensitivity. Visual acuity is scored as a set of two numbers, e.g., 20/40, which indicates that the patient's eye can only read from 20 feet letters large enough for a normal eye to read from 40 ft. Usually, 20/20 vision is normal. Practically, different criteria are used to define vision impairment in different studies. The WHO (1980) defined vision impairment as "best corrected visual acuity of less than 20/60," whereas the Social Security Administration in the United States defined vision impairment as visual acuity of less than 20/40 (Rubin et al., 1997), because visual acuity in that level prevents a person from obtaining a driver's license (Charman, 1985). Vision loss is a synonym of vision impairment. It is common to use the terms vision impairment and vision loss interchangeably.

## Description

Vision impairment is highly prevalent among older adults throughout the world. According to the WHO (2001), there are an estimated total of 180 million people who are visually impaired around the world; it is projected that the number of vision impairment will roughly be doubled worldwide by the year 2020. Around 68 % of all visually impaired persons are 65 years and older, with the rate increasing dramatically for those aged 85 and over (Attebo, Mitchell, & Smith, 1996). A population-based study among Chinese elderly found that the prevalence of vision impairment in at least one eye was 41.3 %, and 73.1 % of those aged 80 years or older have unilateral vision impairment (Michon, Lau, Chan, & Ellwein, 2002).

Vision impairment may lead to difficulties with basic ▶ activities of daily living and more complex tasks such as driving and participating in social activities, physical ▶ disability, and falls. Vision impairment is potentially distressing not only because of the disability but also because of the fear of total loss of vision, the possibility of future deterioration, and potential loneliness and isolation from societies. For an older person who has had full sight until late life, the onset of vision impairment may be a profound experience and often requires considerable psychosocial and functional adjustment. Earlier studies on vision impairment often use global measures of well-being (such as ▶ life satisfaction) or depression as outcome measures. Such measures, however, may not be sensitive to special functional impairment such as vision loss. Some other studies (e.g., McKinzie, Reinhardt, & Benn, 2007; Tolman, Hill, Kleinschmidt, & Gregg, 2005) have examined psychosocial ▶ adaptation to age-related vision loss as a domain-specific outcome, which is conceptualized as a continuum ranging from elements of acceptance and functional compensation to denial, dependence, or despondence (Horowitz & Reinardt, 1998). This outcome measure, however, may fail to address other aspects of health and yields only a partial picture of living with vision loss.

Over the past two decades, a growing number of studies have employed multidimensional measures of ▶ health-related quality of life (HRQOL) as a major health outcome. HRQOL is a concept with a wide range and affected in a complex way by the person's physical health, psychological state, social relationships, personal beliefs, and level of independence (Spiro & Bosse, 2000). It may present a more detailed picture of living with vision loss. There has been a burgeoning literature on visual functioning and HRQOL in visually impaired persons during the past decade, but studies of HRQOL in Chinese older persons with vision impairment are still limited. This essay provides a summary of relevant studies in Chinese societies.

Zhao, Sui, Jia, Fletcher and Ellwein (1998) conducted a study in northern China, and He et al. (1999) conducted a population-based study in southern China to measure visual functioning and vision-related quality of life in individuals operated on for cataract. The two studies were the first to assess vision-related quality of life among Chinese. Both studies indicated that both clinical and patient-reported cataract surgery outcomes were below what should be achievable in rural China. Based on the same data, He, Xu, Wu and Li (2002) examined the outcome of cataract surgery in the elderly population, and their results showed a significant difference of QOL scores between operated and unoperated group after adjusting the confounding effect of visual status, age, sex, and education. Lau, Michon, Chan and Ellwein (2002) conducted a population-based study in Hong Kong to assess outcomes of cataract surgery, and the results indicated that cataract operations did not consistently produce desirable visual acuity outcomes, which were significantly associated with QOL scores. The study suggested that postoperative monitoring would be useful to minimize the impact of vision impairment in older populations; Chan et al. (2003) also evaluated the QOL in patients before and after cataract surgery, and their results indicated that the preoperative visual acuity improved in 94.5 % of patients, remained the same in 2.7 %, and was worse in 2.7 %, whereas QOL scores improved postoperatively in 83.6 %, did not change in 3.6 %, and were worse in 12.7 %. Leung et al. (2012) examined the association of different visual functioning (binocular visual acuity, contrast sensitivity, and stereopsis) and HRQOL as assessed by Medical Outcomes Study Short Form-12 (▶ SF-12) among a total of 4,000 ambulatory community-dwelling Chinese aged 65 years or above. The results suggested that higher physical component summary score was significantly associated with better binocular visual acuity, contrast sensitivity, and stereopsis ($p < .0001$, $P < .001$, and $p = .043$, respectively), while higher mental component summary score was only associated with better visual acuity and contrast sensitivity ($p = .009$ and .005– .158, respectively). The authors concluded that in addition to visual acuity, contrast sensitivity is also important for QOL of visually impaired persons.

Wang and colleagues investigated the effects and roles of psychosocial-spiritual factors in the linkage between vision impairment and HRQOL among Chinese older adults. In a study, Wang, Chan, Ho, and Xiong (2008) examined the associations of ▶ social networks with HRQOL, and the findings indicated that age-related vision loss was significantly associated with older adults' social networks and that social networks were mildly significantly correlated with vision-related QOL after controlling for other variables. Friendship network was a significant predictor, independent of family network, of vision-related QOL. In another study, Wang and Chan (2009) examined the effects and the role of psychosocial adaptation in the linkage between vision impairment and vision-related QOL, based on the theory that successful psychosocial adaptation to chronic illness and disability could be regarded as a process leading to an improvement of QOL (Livneh, 2001). It was found that psychosocial adaptation status was significantly associated with two domains of vision-related QOL (mental health symptoms due to vision and dependency on others due to vision). The results also showed that psychosocial adaptation status could buffer the effect of vision impairment on such domains of vision-related QOL as social function, mental health, and dependency. Wang et al. (2008) also examined the impact and the role of ▶ spirituality, from an eastern perspective, in the linkage between vision impairment and HRQOL among Chinese older adults with visual problems. It was found that spirituality was significantly and positively associated with general physical health, general mental health, and multiple domains of vision-related QOL and that spirituality played a mediating role in the linkage between vision impairment and general mental health.

In Chinese communities, the aging population is growing rapidly. According to statistics in mainland China in 2005, there were 144 million people older than 60 years, accounting for 11 % of China's total population (Du, 2006). In Hong Kong, those aged 60 years and over comprised 18.3 % of the total population in 2010; it is projected that this proportion will increase to 33.8 % by 2039 (Hong Kong Government, 2010). The poor health conditions of older people and the significant increase in healthcare expenditures may impair their QOL substantially. Since vision impairment is popular among older population, further studies to examine factors that may contribute to HRQOL of Chinese elderly with visual problems are warranted.

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# Health-Related Quality of Life in Aboriginal and Non-Aboriginal Populations

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## Definition

► Health-related quality of life (HRQoL) in Aboriginal and non-Aboriginal populations refers to ► well-being or ► satisfaction with life, as it is affected by health, in the indigenous and non-indigenous populations of a country or region. This entry focuses on HRQoL in Canadian Aboriginal and non-Aboriginal populations.

## Description

The Aboriginal population of Canada collectively includes First Nations, Métis, and Inuit peoples. While there is no single definition of the First Nations population, it usually encompasses Status, Non-Status, and Treaty persons (Indian & Northern Affairs Canada, 2004). A Stat{MWS_11_Dictionary} USDICMerriam.3sus individual is recognized by the federal government as being registered under the *Indian Act*, while an individual who has lost status is classified as a Non-Status individual. A Treaty individual belongs to a band that is party to one of the treaties signed with the federal government. The term "Indian" is viewed as pejorative; terms such as native peoples or indigenous peoples are favored. Métis people are of mixed European (mainly French) and First Nations descent and self-identify as having Métis origins. The Inuit are the indigenous people of the Arctic and reside in Greenland, Russia, Denmark, Alaska, and USA, as well as Canada. Within Canada, Inuit people primarily inhabit the territories of Yukon, Northwest Territories, and Nunavut as well as parts of the provinces of Quebec and Newfoundland and Labrador.

HRQoL is a multidimensional construct that encompasses mental, physical, and ► social health. Measuring HRQoL is challenging because it reflects subjective experiences and complex phenomena, such as pain. Individuals from different ethnic backgrounds may not interpret questions about their experiences of health in the same way (Aaronson, 1988; Lubetkin, Jia, Franks, & Gold, 2005). Several types of instruments have been developed to measure HRQoL, and they can be classified on different dimensions, including breadth and frame of reference. General-use measures can be used across a broad range of health conditions and therefore have wide application in comparative studies of different populations, including Aboriginal and non-Aboriginal populations. On the other hand, disease-specific measures capture information about the unique symptoms, behaviors, or experiences associated with a health condition. Some HRQoL instruments capture health perceptions while others focus on preferences for different health states.

Investigations about the health of Canadian Aboriginal and non-Aboriginal populations reveal that the absolute burden of disease has declined in Aboriginal populations over time, as measured via overall ► mortality rates and ► life expectancy. However, Aboriginal populations still experience a higher relative burden of disease than non-Aboriginal populations (Frohlich, Ross, & Richmond, 2006; Lix, Bruce, Sarkar, & Young, 2009; MacMillan, MacMillan, Offord, & Dingle, 1996). The types of illnesses experienced by Aboriginal populations have shifted over time; rates of communicable diseases, such as tuberculosis, have decreased, while rates of chronic diseases, such as diabetes and heart disease, are increasing (Reading, 2009). Rates of injury and substance use are also higher among Aboriginal populations. These differences between Aboriginal and non-Aboriginal populations tend to persist even after controlling for differences in sociodemographic characteristics.

Studies that focus specifically on the HRQoL of Canadian Aboriginal and non-Aboriginal populations have primarily relied on general-use measures like the ► Medical Outcomes Study 36-item Short Form (SF-36) questionnaire (Thommasen, Berkowitz, Thommasen, & Michalos, 2005; Thommasen, Patenaude, Anderson, McArthur, & Tildesley, 2004; Thommasen & Zhang, 2006). The SF-36 has also been used for comparative investigations of Aboriginal and non-Aboriginal populations in other countries (Butler, Allnutt, Kariminia, & Cain, 2007; Kariminia, Butler, & Levy, 2007). The SF-36 encompasses eight domains of health: physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health. Scores can be produced for each of these eight health domains, and also for two summary measures: the Physical Component Summary (PCS) and Mental Component Summary (MCS). The psychometric properties of the SF-36 have been investigated in a number of studies, and it has been shown to be valid and reliable.

Normative data for Canada have been published (Hopman et al., 2000), although there are no norms for Aboriginal populations. Canadian data have shown that Aboriginal populations tend to have lower scores on the SF-36 domains than non-Aboriginal populations (Thommasen et al., 2005).

However, valid statistical inferences for comparative analyses also require that ▶ measurement invariance across populations be established (Gregorich, 2006; Vandenberg & Lance, 2006). Investigations of measurement invariance are used to assess whether individuals from different populations interpret a measure in a conceptually similar manner (Meredith & Teresi, 2006). If equivalence cannot be established, then inferential analyses of group differences must be interpreted with caution because they may reflect measurement artifact rather than true population differences.

Few HRQoL instruments have been investigated for measurement equivalence in Canadian Aboriginal and non-Aboriginal populations. Lix, Metge, and Leslie (2009) tested the measurement equivalence of the SF-36 and an osteoporosis-specific quality of life tool, the mini-Osteoporosis Quality of Life Questionnaire (mini-OQLQ), in Manitoba Aboriginal and non-Aboriginal women using structural equation modeling techniques. The study found complete invariance between populations for the SF-36 instrument, but not for the disease-specific instrument. These results suggest that Aboriginal status appears to influence responses about the effects of osteoporosis on quality of life as measured by the mini-OQLQ instrument, but does not influence responses about general HRQoL.

## Discussion

There is potential for heterogeneity in subjective responses about health perceptions in Aboriginal and non-Aboriginal populations. Differences in the interpretation of questions and also in population disease characteristics may contribute to different patterns of responses. For example, Aboriginal and non-Aboriginal populations may not assign the same relative importance to HRQoL dimensions, which can influence the comparability of summary scores. Moreover, a recent study revealed that among northern Canadian Aboriginal populations, the prevalence of health conditions such as heart disease as well as risk factors such as smoking and alcohol consumption is not equal among First Nations, Métis, and Inuit populations (Lix, Bruce et al., 2009). If these confounding factors are not accounted for in the analysis of HRQoL data, the conclusions of comparative studies may also not be valid.

Few instruments have been investigated for measurement equivalence in Aboriginal and non-Aboriginal populations; the results obtained from the SF-36 and disease-specific measures may not generalize to HRQoL instruments such as the Sickness Impact Profile or EQ-5D. Moreover, different methods to assess measurement equivalence need to be evaluated, because they may not result in the same conclusions. While structural equation modeling methods have been well established for assessing measurement equivalence, some researchers have also proposed using item response theory models, which investigate equivalence for individual instrument questions rather than domain scores (Meredith & Teresi, 2006). Thus, a number of opportunities for further methodological and substantive research about the HRQoL of Aboriginal and non-Aboriginal populations exist.

## Cross-References

- ▶ Disease-Specific Measure
- ▶ Health-Related Quality of Life (HRQoL)
- ▶ Item Response Theory [IRT]
- ▶ Life Expectancy
- ▶ Measurement Invariance
- ▶ Medical Outcomes Study Short-Form 36-Item Questionnaire
- ▶ Mortality Rates
- ▶ Pain
- ▶ Physical Quality of Life
- ▶ Psychological Well-Being Inventory
- ▶ Reliability
- ▶ Satisfaction with Life

- ▶ Sickness Impact Profile (SIP)
- ▶ Social Health
- ▶ Subjective Well-being

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# Health-Related Quality of Life Measures and Lung Transplant Patients

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## Synonyms

PROMs, patient-reported outcome measures; PROs, patient-reported outcomes

## Definition

Virtually all definitions of health-related quality of life (HRQL) suggest that health is a multidimensional concept. *HRQL* assessments illustrate the impact of the disease and its treatment in the modern society.

In lung transplantation, *HRQL* assessments describe health status from the patient's perspectives serving as a powerful tool that evaluate and explain patient-reported outcomes. The inclusion of HRQL measures in the routine clinical care of chronically ill patients plays an important role in patient's clinical management.

For example, two post-lung transplant patients with the same underlying condition (e.g., chronic obstructive pulmonary disease), age, gender, and immunosuppressant regimen may perceive the effects of transplantation and treatment differently. One individual may be able to have a more active and enjoyable life whereas the other individual may not.

## Description

### HRQL and Lung Transplantation

The major end-points in lung transplantation are survival and health-related quality of life (HRQL). HRQL assessments are important for understanding the impact of treatment on patients, including physical functioning and ▶ emotional well-being. Recent studies shown that after transplantation, the most significant improvements were reported in physical and social functioning and overall HRQL (Anyanwu et al., 2001; Gerbase et al., 2005; Gross, Savick, Bolman, & Hertz, 1995; Lanuza et al., 2000; Limbos et al., 2000; Santana, Feeny, Jackson, Weinkauf, & Lien, 2009; Singer, Gould, Tomlinson, & Theodore, 2005; Stavern et al., 2000; Swigris, Gould, & Wilson, 2005; Ten Vergert et al., 1998), whereas psychological problems seemed to be prevalent after transplantation (Santana et al., 2009; Ten Vergert et al., 1998). After transplantation, HRQL improvement is the only benefit for some patients especially for patients with certain diagnoses such as emphysema (doi:10.1016/S0140-6736(97)06405-2).

### Generic Measures

*Generic HRQL measures* can be used in any population. These measures are multidimensional, covering a large number of domains such as physical, social, and emotional function, and ▶ pain. The advantage of generic measures is that they allow comparisons across a wide range of diseases and conditions. There are two main categories of generic instruments: health profiles and preference-based measures.

The most commonly used measures are health profiles, like the ▶ SF-36 (Santana et al., 2010). Despite the floor effects, SF-36 has the advantage over other profile measures of assessing vitality. The assessment of vitality is important in the lung transplant population. Health profiles do not incorporate values/preference information which requires such data for the estimation of quality-adjusted life years (QALY). As a result, health profiles measures are not suitable for use in economic evaluations comparing the cost-effectiveness of different treatments and interventions.

In lung transplantation, the determination of relative benefits and costs of different treatments and interventions is of importance to clinical care optimization. Therefore, recently, studies have incorporated preference-based measures (Anyanwu et al., 2001; Ramsey et al., 1995; Santana et al., 2009; Singer, Theodore, & Gould, 2003). There are two types of preference-based measures: direct and multi-attribute. Direct measures, visual analog scales (VAS), time trade-off (TTO), and standard gamble (SG) assess the preference for a health state and are suitable for specific purposes allowing the researcher to incorporate items that are more relevant to a particular population. Multi-attribute preference measures, such as Health Utilities Index Mark 2 (HUI2) (Torrance et al., 1996) and Mark 3 (HUI3) (Feeny et al., 2002), EuroQol (EQ-5D)(Kind, 1996), SF-6D (Brazier & Roberts, 2004), and Quality of Well-being questionnaire (QWB) (Kaplan, Bush, & Berry, 1976), describe the health status of a subject using a multi-attribute classification system and use a scoring system to value health status.

Table 1 displays the comparison of generic measures. Some of the measures have floor effects (SF-36; Brazier & Roberts, 2004) while others are lengthy (QWB; Kaplan et al., 1976), increasing the load to patients. The HUI3 has more breadth and depth (HUI3 includes 8 attributes with 5–6 levels in each) than the EQ-5D (Kind, 1996) (includes 5 attributes with 3 levels

**Health-Related Quality of Life Measures and Lung Transplant Patients, Table 1** Summary information on health-related quality of life measures

| Generic health profile | Domains | General characteristic | Average completion time (minutes) | Use/propose |
|---|---|---|---|---|
| SF-36 | 8 | 36 items | Self-completed | Designed for group level application, use in clinical practice and research, policy evaluation |
| | Physical functioning | Scores: 0–100 | 10 min | |
| | Role limitation | 100 (perfect health) | | |
| | Bodily pain | Scaling method: Likert | | Population health Survey |
| | General health | Ceiling effect | | |
| | Vitality | Floor effects | | |
| | Social functioning | | | |
| | Role limitation physical | | | |
| | Mental health | | | |
| | 2 summary scores | | | |
| SF-12 | 8 | 12 items | Self-completed | Designed for group level application, use in clinical practice and research, policy evaluation |
| | Physical functioning | Scores: 0–100 | 10 min | |
| | Role limitation | 100 (perfect health) | | |
| | Bodily pain | Scaling method: Likert | | |
| | General health | Yields physical and mental component summary scales | | Population health Survey |
| | Vitality | Floor effects | | |
| | Social functioning | | | |
| | Role limitation physical | | | |
| | Mental health | | | |
| SIP | 12 | 136 items | 20–30 min | Evaluation program planning, policy formulation |
| | Physical and psychological | Scores: 0–100 | | |
| | Eating, working, sleeping, home, management, no pain, no mental health | 0 (perfect health)<br>Overall score | | |
| DUKE | 9 | 17 items | Self-completed | Designed for group level application use in clinical practice, heath promotion |
| | Physical and social functioning | Scaling method: Likert | 5 min | |
| | Mental health, pain | Ceiling effects | | |
| | Health perception, disability, depression, anxiety, self-esteem | | | |

(*continued*)

in each), providing more detailed information on the patient's health status for clinicians. Lung transplant recipients are fairly close to population ▶ norms and typically experience states with mild burdens (Santana et al., 2009). Measures with ceiling effects have the potential to misinterpret health status, identifying a patient as experiencing perfect health when in reality the patient is experiencing a health state with mild burden.

## Specific Measures

*Specific measures* cover dimensions that are relevant to a disease. The advantage of specific instruments is that they allow for measuring change in patient condition due to an intervention or disease progression. Specific measures are useful in evaluative studies.

The heterogeneity of patient population within lung transplant is characterized by the underlying diagnoses. Diagnoses include obstructive diseases

**Health-Related Quality of Life Measures and Lung Transplant Patients, Table 1** (continued)

| Generic health profile | Domains | General characteristic | Average completion time (minutes) | Use/propose |
|---|---|---|---|---|
| COOP | 9 | 9 items | Self-completed | Designed for group level application use in clinical practice, heath promotion |
| | Physical and social functioning | Scaling method not needed | 6 min | |
| | Mental health | Ceiling effect | | Screening and planning care |
| | Pain | | | |
| | Health perception | | | |
| | Role functioning | | | |
| | Change in health | | | |
| | Social support | | | |
| | Overall life quality | | | |
| FSQ | 8 | 34 items | Self-completed | Screen for disabilities, monitoring changes in functioning in primary care |
| | Physical and social functioning | Scaling method: Likert only for 6 | 15 min | |
| | Mental health | | | |
| | Health perception | | | |
| | Role functioning | | | |
| | Disability | | | |
| | Sexual functioning | | | |
| | Quantity of interaction | | | |
| NHP | 6 Physical and social functioning | 38 items | | Designed for group level application use in clinical practice |
| | Mental health | Scaling: Thurstone | | Health service planning and evaluation |
| | Pain | Ceiling effects | | |
| | Vitality | Overall score | | Population surveys |
| | Sleep | | | |

| Preference based multi-attribute | Domains | General characteristic | Number of health states | Average completion time (minutes) | Use/Propose |
|---|---|---|---|---|---|
| EQ-5D | 5 with 3 different levels on each | Ceiling effects | 243 | Self-administered | Clinical trials and clinical studies in general |
| | Mobility | Scores: | | Less than 5 min | |
| | Self-care | 0.59,0.00, 1.00 (UK) | | | Population health Survey |
| | Usual activities pain/discomfort | 0.11, 0.00, 1.00 (US) | | | Cost Utility Analysis |
| | Anxiety or depression | TTO (overall health status) | | | |

*(continued)*

(chronic obstructive disease), interstitial diseases (idiopathic pulmonary fibrosis), suppurative diseases (cystic fibrosis), and pulmonary vascular diseases (pulmonary arterial hypertension). Because of the diversity in diagnoses, it is difficult to describe patient health status. Thus, most of the studies use a battery of questionnaires including specific respiratory questionnaires such as St. George Respiratory Questionnaire (SGRQ) (www.healthstatus.sgul.ac.uk) or Chronic Respiratory Questionnaire (CRQ) (qol.thoracic.org) and the addition of generic measures.

**Health-Related Quality of Life Measures and Lung Transplant Patients, Table 1** (continued)

| Generic health profile | Domains | General characteristic | Average completion time (minutes) | Use/propose | |
|---|---|---|---|---|---|
| HUI2 | 7 with 4, 5, 4, 4, 5, 3 levels on each | Modest floor effects | 24,000 | Self-completed | Clinical trials and clinical studies in general |
| | Sensation [vision, hearing, speech], mobility | Overall score scale: | | 5–10 min | Cost Utility Analysis |
| | Emotion | 0.03 (all-worst) | | | Chronic illness, healthy population |
| | Cognition | 0.00 (dead) | | | |
| | Self-care | 1.00 (perfect health) | | | |
| | Pain | | | | Decision making and clinical management |
| | Fertility | | | | Population health Survey |
| HUI3 | 8 with 6, 6, 5, 6, 6, 5, 6, 5 levels on each | Overall score scale: | 972,000 | Self-completed | Clinical trials and clinical studies in general |
| | Vision | 0.36 (all-worst) | | 5–10 min | Cost Utility Analysis |
| | Hearing | 0.00 (dead) | | | Chronic illness, healthy population |
| | Speech ambulation dexterity | 1.00 (perfect health) | | | Decision making and clinical management |
| | Emotion | | | | |
| | Cognition | | | | |
| | Pain | | | | Population health Survey |
| QWB | 4 and the 3 first have 3, 3, 5 levels | Scaling, VAS | 1,216 | | Clinical trials and clinical studies in general. |
| | Mobility | | | | |
| | physical activity | | | | Cost Utility Analysis |
| | social activity | | | | Population health Survey |

The specific respiratory questionnaires describe respiratory symptoms, limitations in breathing and ambulation, and disease impact on social and psychological functioning, whereas generic measures describe, for instance, how dyspnea limits ambulation and how cognition deteriorates commonly due to the chronic nature of the disease. Commonly mental health measures are added to the battery of questionnaires, such as Hospital Anxiety and Depression Scale (HADS, www.ncbi.nlm.nih.gov/pubmed/6880820).

Specific questionnaires for the particular underlying diagnoses include the Cambridge Pulmonary Hypertension Outcome Review (CAMPHOR http://www.springerlink.com/content/7404683356w4qxj7/) and the Cystic Fibrosis Questionnaire (CFQ http://www.psy.miami.edu/cfq_QLab/index.html).

## The Importance of Measuring HRQL in Lung Transplantation

The measurement and addition of HRQL information to the routine clinical care of lung transplant patients provides an opportunity to healthcare providers to tailor care to the underlying diagnosis and characteristics of individual patients.

*Cognition* deficits may jeopardize adherence to medication more so in lung transplant recipients who are taking complex medication regimens. The inclusion of a HRQL measure that captures cognition is recommended.

After lung transplantation, *emotional health* is affected, depression seems to improve after transplantation whereas anxiety prevails. *Pain* is prevalent after transplantation. *Bronchiolitis Obliterans Syndrome* (BOS) has a negative impact on patient's health status. The most compelling evidence is provided by van der Berg and colleagues (http://ajrccm.atsjournals.org/content/161/6/1937.long) who compared patients with and without BOS. The authors highlighted the association between BOS and reduction in HRQL with a marked decrease in patient mobility.

All in all, these findings elucidate the experiences of recipients of lung transplants and suggest that subgroup differences exist. The identification of individual patient burdens will help to guide care to improve the quality of care and overall HRQL.

Another important point to notice is *gender differences*. In some studies, female recipients reported more distress and symptom frequency than male recipients (http://chestjournal.chestpubs.org/content/112/5/1165). Women were concerned about body satisfaction and ▶ sexual functioning after transplantation. The distress was associated with body appearance and appetite changes (http://dx.doi.org/10.1016/j.healun.2005.02.005). However, Singer et al. (2005) found that post-lung transplant, women enjoyed better health than their male counterparts. Members of the lung transplant team should consider the gender difference, develop symptom management strategies, and individualize patient care.

Past studies highlighted the importance of assessing HRQL in lung transplantation. Anyanwu et al. (2001) recommended HRQL collection as part of a standard clinical assessment for research purposes and clinical follow-up. Santana et al. (2010) described the effects of HRQL measures in the management of lung transplant patients and advice on routine clinical use. Singer et al. (2005) suggested that not only survival but also HRQL data should be included in the mathematical models used to inform lung allocation decisions and the choice of lung transplant operations. There is evidence to suggest that lung transplant programs should routinely collect PROs data to informed decision making and improve patient care.

HRQL assessments are important for understanding the impact of treatment on patients, including physical functioning and emotional well-being. Lung transplant programs should routinely collect HRQL data to improve patient care and inform decision making and improvements in the quality of care.

Further information to aid with the selection and implementation process of HRQL measures is offered by The International Society of Quality of Life (www.isoqol.org).

## Cross-References

- ▶ CAMPHOR: http://www.springerlink.com/content/7404683356w4qxj7/
- ▶ COOP: www.springerlink.com/index/g56466t11413rg27.pdf
- ▶ DUKE: http://healthmeasures.mc.duke.edu
- ▶ EQ-5D: www.euroqol.org/
- ▶ HADS: www.ncbi.nlm.nih.gov/pubmed/6880820
- ▶ HUI: www.healthutilities.com/
- ▶ Patient-Reported Outcome Measure
- ▶ PROQOLID: http://www.proqolid.org/
- ▶ QWB: http://famprevmed.ucsd.edu/hoap
- ▶ SF-36: www.sf-36.org; www.qualymetric.com
- ▶ SGRQ: www.healthstatus.sgul.ac.uk
- ▶ Summary Report: http://www.ihe.ca/documents/HRQL%20final.pdf

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# Health-Related Quality of Life Questionnaire Readability

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## Description

▶ Ethnic minorities and underserved populations in the United States consistently have worse health outcomes, screening rates, disease management, and lower survival rates (Paz, Liu, Fongwa, Morales, & Hays, 2009). Health literacy and limited reading skills are known to be important barriers to improving health communication and outcomes. Low literacy disproportionally affects vulnerable populations and ethnic minorities including those immigrants who arrive with low levels of ▶ education, socioeconomic status, English proficiency, and discrepant cultural models with regard to disease and disease prevention compared to US models (Rudd, 2007).

Several studies have been conducted to evaluate national levels of ▶ literacy. Analysis from the 2003 National Assessment of Adult Literary Survey (National Center for Education Statistics, 2003) in the United States indicated that 44 % of adults had a basic or below basic literacy level (http://nces.ed.gov/naal/index.asp). Furthermore, this report along with other studies has found that more than one third of the population has inadequate or marginal health literacy (http://nces.ed.gov/naal/index.asp, Gazmararian et al., 1999). Studies that have evaluated patient literacy have also found that patient educational level is not always consistent with literacy level. Davis, Crouch, Wills, Miller, and Abdehou (1990) reported that among adult patients with a fifth to tenth grade education, 60 % were reading at least three grades below their grade level. Other similar studies report up to six grade reading levels below the highest grade completed.

Reading ease evaluation has become increasingly important since research has shown that comprehension is higher when texts are easily read. The concept of readability refers to the ease of a piece of text to be read and understood. Discrepancies between the readability of health information and the literacy skills of the general population have been extensively reported since the onset of health-related readability evaluation in the 1980s (Calderon & Beltran, 2004; Meade, 2005). There are many studies that report on health materials written at readability levels far above the recommended US national norms. Specifically with surveys, US norms recommend that they do not include items that require more than 8 or 9 years of formal schooling for the general population; and more than 5 years of formal schooling for vulnerable populations (Calderon, Morales, Liu, & Hays, 2006). Items that are not easily understood will have higher rates of nonresponse and the data may become unreliable due to items being incomprehensible to subjects with low literacy levels.

Most health-related readability studies have focused on educational materials, consent forms, and more recently, some internet-based health information studies have also been done. By contrast, relatively few studies have been conducted to evaluate the readability of health surveys. Furthermore, only one of the articles reviewed by Calderon et al. (2006) evaluated readability of each item separately. This is important since computerized methods calculate a weighted average of text readability, when the instrument is evaluated as a whole, and this average readability score only reflects the mean level of the readability of the entire instrument. But, in a survey, the average readability score of the whole instrument tells only a part of the story because the subject needs to have an adequate literacy level to understand each item independently. In addition, mean readability scores are insufficient parameters to describe the real reading level that participants face in a survey as the variation of item reading levels may be high and therefore, the full range of scores would not be captured. Thus, before collecting survey data, assessing readability scores at the item level is important to ensure that survey collected data adequately reflects the reality of the study population.

There are a number of manual and computerized formulae that can be used to evaluate the readability of written text. These formulae are based on the number of syllables per word and the number of words per sentence, two components that have been found to be good predictors of readability (Meade & Smith, 1991). These formulae provide an estimate of the reading level necessary to read and comprehend given text. Two commonly used formulae are the Flesch-Kincaid (F-K) and the Flesch Reading Ease (FRE) (Calderon et al., 2006; Meade & Smith, 1991). Even though both methods are based on measuring word length and sentence length, their results are different because they use different weighting factors. The F-K method produces a corresponding grade level, which is needed to read the material. Scores generated by the F-K method are highly correlated with the scores calculated by other formulae. The FRE method rates text based on a 100-point scale so that 100 represents the easiest text and 0 the hardest. The formulae used to calculate the FRE and F-K scores are as follows:

$$\begin{aligned} \text{FRE score} &= 206.835 - (1.015 \times \text{ASL}) \\ &\quad - (84.6 \times \text{ASW}) \\ \text{F-K reading grade level score} &= (0.39 \times \text{ASL}) \\ &\quad + (11.8 \times \text{ASW}) \\ &\quad - 15.59 \end{aligned}$$

where ASL is the average sentence length (number of words divided by number of sentences) and ASW is the average number of syllables per word (number of syllables divided by number of words).

A number of generic and disease-targeted health-related quality of life (HRQOL) instruments have been developed. These measures assume comprehension of the questions by respondents. The Health Measurement Research Group conducted a multi-site study to evaluate extensively used HRQOL instruments (Fryback et al., 2007). Five of these are generic instruments: the ► Short Form Health Survey-36 item (SF-36v2), Health Utilities Index (HUI), European Quality of Life-5dimensional (EQ-5D), Quality of Well-Being Scale-Self-Administered (QWB-SA), and the Health and Activities Limitations Index (HALex). In addition, two disease-targeted instruments were included to learn how health assessments function differently in subjects with specific conditions: the Minnesota Living with Heart Failure questionnaire (MLHFQ) and the ► National Eye Institute Visual Functioning Questionnaire-25 item (VFQ-25). These latter instruments were selected because they focus on patients with heart disease and cataracts. Below are brief descriptions and results of readability analyses done at the item level for these seven commonly used HRQOL instruments.

## Generic Profile Measures

### Short Forms-36 (SF-36)

Originally developed in the 1980s as part of the Medical Outcomes Study, this instrument is composed of 8 scales: Physical functioning (10), role limitations due to physical problems (4), bodily pain (2), general health perceptions (5), energy/vitality (4), social functioning (2), role limitations due to emotional problems (3), and mental health/emotional distress (5) (Hays, Sherbourne, & Mazel, 1993). In addition, the instrument also includes one item that measures change in perceived health (1). Even though the total mean and median readability values were appropriate, nineteen items (53 %) scored above the recommended 5 years of schooling according to the F-K, and 18 items (50 %) are harder than the recommended categories according to the FRE.

### Health Utilities Index (HUI)

Developed at the McMaster University in Canada, the HUI measure contains a health-status classification system and a preference-based scoring formula (Horsman, Furlong, Feeny, & Torrance, 2003). The HUI combines two systems which have been developed: HUI2 with seven dimensions: sensation (vision, hearing, and speech) (6), mobility (2), emotion (1), cognition or mental health (2), self-care (1), pain (2), and fertility which was not included in this study; and the HUI3 which measures eight attributes: vision, hearing, speech, ambulation, dexterity, emotion, cognition, and pain. All 15 items (100 %) of this survey scored above the recommended threshold for the F-K and the FRE.

### European Quality of Life-5dimensional (EQ-5D)

With the goal of having a standardized generic instrument that could be used across Europe to measure HRQOL, the European Quality of Life group (EuroQoL Group, 1987) developed the EQ-5D (http://www.euroqol.org). Providing a single index value for general health status, the EQ-5D preference-based measure is composed of 5 dimensions: mobility (1), self-care (1), usual activities (1), pain/discomfort (1), and anxiety/depression (1). Readability results for this survey revealed that 50 % of the items require more than 5 years of formal schooling according to the F-K, and 67 % of the items were deemed harder than the recommended level according to the FRE.

### Quality of Well-Being Scale-Self-Administered (QWB-SA)

The QWB-SA was developed by the Health Outcomes Assessment Program at the University of California, San Diego, to improve the original QWB, which was lengthy, and difficult to administer (Sieber, Groessl, David, Ganiats, & Kaplan, 2004). With a total of 75 items, the QWB-SA is comprised of five sections: presence or absence of 18 chronic and 25 acute physical symptoms (43), mental health symptoms (14), self-care (2), mobility (3), physical activity (9), social activity/ role expectations (3), and general health (1). Eighty-five percent of the items require more than 5 years of formal schooling according to the F-K, and 79 % of the items were deemed harder than recommended according to the FRE.

### Health and Activities Limitations Index (HALex)

The HALex version used in this study was adapted to the one used by the Behavioral Risk Factor Surveillance Survey from the U.S. Center for Disease Control and Prevention (Livingston & Ko, 2002). The HALex assesses HRQOL based on the person's perceived health status as well as daily activity limitation. The 7 items used in the HALex are part of the National Health Interview Survey, and correspond to the physical role limitations domain. The HALex single score index reflects the total impact of a specific health state on a person's overall HRQOL. One hundred percent of the items were deemed harder than recommended according to the F-K and the FRE.

## Disease-Targeted Measures

### Minnesota Living with Heart Failure Questionnaire (MLHFQ)

Specifically designed to assess the effects of heart failure and its treatments on quality of life, the 21-item MLHFQ was developed in 1984 by Rector and Cohn (1992). Items are representative of the key dimensions of quality of life that are affected by heart failure: physical (8), emotional (5), and heart-specific overall quality of life (8). Using a 6-point categorical response scale to ask the subject how much his/her life is affected by each dimension, the questionnaire produces a global score along with scores for each one of the previously mentioned dimensions. One hundred percent of the items were deemed harder than recommended according to the F-K and the FRE.

### National Eye Institute Visual Functioning Questionnaire-25 Item (VFQ-25)

The VFQ-25 was developed to measure self-reported, vision-targeted health status (Mangione et al., 2001). Hence, the VFQ reflects the influence of visual disabilities and visual symptoms on generic health domains as well as task-oriented domains that are related to visual functioning. A 25-item vision-targeted measure, the VFQ-25's 12 subscales include: General Health (1), General Vision (1), Near Vision Activities (3), Distance Vision Activities (3), Ocular Pain (2), Vision-Specific Social Function (2), Vision-Specific Role Difficulties (2), Vision-Specific Mental Health (4), Vision-Specific Dependency (3), Driving Difficulties (2), Color Vision (1), and Peripheral Vision (1). Eighty percent of the items require more than 5 years of formal schooling according to the F-K, and 80 % of the items were deemed harder than the recommended threshold according to the FRE.

The results of this study reveal that current HRQOL measures may be inappropriate for general population surveys and in particular, they are inappropriate for vulnerable populations. Readability analysis for HRQOL surveys is important and furthermore, analysis at the item level is essential. These findings show that all these commonly used surveys had a significant number of items with scores above the recommended threshold. Moreover, most readability studies, which report survey mean scores, are inadequate since a significant segment of the population will not have the literacy skills needed to comprehend and respond correctly to many items in the surveys. Vulnerable populations will especially be affected with the administration of surveys, which are beyond their literary skills.

Readability formulae are useful in terms of a quantifiable estimation of reading ease. However, they do not take into account other factors that are relevant when trying to understand text comprehension. For example, there are personal factors like previous experience and personal interest that might affect readability. In addition, other aspects, like layout, visuals, cultural appropriateness, or items regarding the same topic, are all features that might affect how text is understood.

Nonetheless, the formulae used in this study are helpful in developing surveys with simpler wording and grammatical structure. Both methods yield better results when using shorter sentences and easier words, which often are more commonly used. By eliminating unnecessary words, removing repeated phrases, and using shorter and more universally used words, readability scores can be lowered closing the gap between survey readability and population ability.

Other indicators to measure readability are also existent and noteworthy to mention. For example, the SMOG (Simple Measure of Gobbledygook) index is often used in the U.K. and estimates the number of years of education needed to appropriately understand a piece of text. Additional indices are also available in other languages. Comparisons of the readability level of the same survey in different languages would be especially useful with these surveys that are globally used.

The validity of data collected from self-reported outcome measures depends upon the subject's ability to comprehend each item in the survey. In addition, data is at an even higher risk of poor quality when surveys are administered to populations who lack literacy levels or English proficiency necessary for full comprehension of items. If the goal of outcome measurement is ultimately to improve HRQOL, sensitivity to an ever-changing population is necessary when using existing measures and when creating new methods of evaluation. Surveys that are multicultural, multilingual, and literacy sensitive to a demographically continuously changing population are warranted.

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## Health-Related Quality of Life

▶ Cigarette Smoking and Drinking
▶ Subjective Indicators of Well-Being

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## Health-Related Quality of Life and Heart Failure

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### Synonyms

Chronic Heart Failure Questionnaire (CHFQ); Kansas City Cardiomyopathy Questionnaire (KCCQ); Left Ventricular Dysfunction (LVD-36); Minnesota Living with Heart Failure Questionnaire (MLHFQ); Questionnaire for Severe Heart Failure (QLQ-SHF), Quality of Life

### Definition

▶ Health-related quality of life (HRQOL) reported by patients suffering from heart failure.

### Description

Morbidity in patients with heart failure (HF) mainly differs depending on how much pumping capacity the patient has lost. However, in general, HF not only comprises physical symptoms (shortness of breath and ▶ fatigue), impaired ▶ exercise capacity, and recurrent hospitalization, but also involves psychological problems, iatrogenic adverse effects, and a curtailment of social activities (Stewart et al., 1989). Due to these multiple factors, many professionals argue that the evaluation of HRQOL in HF patients, as a global comprehensive outcome, deserves special attention (Jaarsma & Lesman-Leegte, 2010). And this is especially true now that the number of patients living with HF is on the rise due to the effectiveness of interventions and an ▶ aging population (Konstam, 2012). In fact, along with ▶ disability and cognitive impairment, HRQOL is considered one of the three most important measureable factors in elderly patients who are likely to have multiple comorbidities (Taylor & Stott, 2002).

The driving force behind the growing importance of the HRQOL measurement may lie not only in the recognition that traditional (biological or physiological) outcomes do not reflect the impact of disease and interventions on patients' lives, but also in the fact that patients are playing an increasingly proactive role in decision-making, especially those diagnosed with chronic conditions (al-Kaade & Hauptman, 2001).

#### Impact of HF on Patients' HRQOL

Compared to the general population, the HRQOL of HF patients is significantly reduced (Juenger et al., 2002), and this holds true when this group is compared to patients with other chronic diseases as well. Evidence has shown HF as one of the chronic conditions that provokes the highest impairment in physical and mental health, comparable to or greater than arthritis and chronic lung disease (Stewart et al., 1989; Alonso et al., 2004). This impairment is especially reflected in the physical functioning, role physical, and general health scores of the ▶ SF-36 when compared to individuals with no chronic conditions (Alonso et al., 2004). Another study showed that most patients with HF report problems in mobility (65.9 %), usual activities

(75.9 %), and ▶ pain/discomfort (67.8 %), based on the EQ-5D (Calvert, Freemantle, & Cleland, 2005). In addition to the already dramatically reduced physical health, patients with advanced HF have presented scores in "mental health" similar to patients with major depression (Juenger et al., 2002).

### HRQOL Determinants in Patients with HF

As is common in the general population or in association with other disorders, a lower HRQOL in patients with HF has been found to be independently associated with certain sociodemographic characteristics of the individuals, such as advanced age or lower socioeconomic status (Iqbal, Francis, Reid, Murray, & Denvir, 2010). Furthermore, for HF patients, some of the dimensions of HRQOL are also related to other physical or mental clinical indicators.

The associations between HRQOL scores and clinical variables or functional capacity measurements have been evaluated in several studies, most of which have yielded inconclusive results (Juenger et al., 2002). On one hand, it seems that HRQOL decreases as the functional ability worsens, as evidenced in factors such as peak oxygen uptake and walking capacity (Iqbal et al., 2010). On the other hand, there is some controversy about the reliance of the results of physiological outcomes, such as the ejection fraction (Westlake et al., 2002), which was found not to be associated with patient-reported HRQOL (Juenger et al., 2002).

The HRQOL of HF patients has also been independently associated with less common outcomes in clinical management such as mental health and ▶ social support. Some studies have shown that neuroticism (Westlake et al., 2002), emotional distress (Lainscak & Keber, 2003), and depression (Gottlieb et al., 2004) are significant risk factors for decreased HRQOL. Moreover, as Coelho et al. (2005) mentioned in their review, some of these studies showed a higher incidence of depression in the young, which may suggest that depression is due to a larger disparity between the perception and expectation of functional status. That state of depression may lead physicians to classify these patients as more severely compromised and to lower their functional class assessments (Coelho et al., 2005). Taking the HRQOL as a determinant, Havranek et al. (2004) found that lower reported scores were predictors for the development of depressive symptoms.

Finally, some studies have reported that a lack of social support (informal carer) and social isolation (loss of contacts and activities) are associated with an increased risk of mortality among HF patients (Iqbal et al., 2010).

### HRQOL as an Outcome in HF

The traditional end points in HF are ▶ death, recurrent hospitalization, hemodynamic parameters, and reduced exercise and functional capacities. However, patient management today also has a patient-reported outcome (PRO) component (Alonso et al., 2004). This holistic perspective is considered very relevant under WHO's current definition of health, as well as by many professional societies and associations (Dickstein et al., 2008), which support going beyond hard clinical outcomes in the evaluation of treatment or interventions among HF patients. Several decades ago, Wenger suggested HRQOL as a suitable assessment tool for HF patients in certain circumstances (Wenger, 1989):

1. When there is little likelihood of one treatment showing a major improvement in survival over another in a clinical trial. In such a trial the HRQOL measurement might point towards the choice of therapy that would most benefit patients.
2. When a treatment is effective in reducing mortality but has toxic or unacceptable side effects. A quality of life measurement in this case may help physicians and their patients weigh the benefits and risks of such treatment.
3. When patients are asymptomatic or have mild symptoms, the morbidity and mortality rates are low, and the therapy is long-term.

In instances such as these, the assessment of HRQOL is increasingly being included in clinical research in HF and is used by the pharmaceutical industry for the evaluation of new treatments (Anand, Florea, & Fisher, 2002).

In the same way, HRQOL is a major goal in the context of preventive and therapeutic cardiology, from comprehensive management to exercise programs.

There are many examples of studies (clinical trials and observational analyses) in which HRQOL has been the primary or at least a secondary end point (Garin et al., 2009; Anand et al., 2002) (e.g., studies on beta-blockers (Edes, Gasior, & Wita, 2005) or exercise – (Dall'Ago, Chiappa, Guths, Stein, & Ribeiro, 2006). Some special management programs have been shown to significantly improve HRQOL – home monitoring (Konstam, 2012), outpatient HF clinics (Hole, Grundtvig, Gullestad, Flonaes, & Westheim, 2010), and brief cognitive therapy interventions (Dekker, Moser, Peden, & Lennie, 2012). In the same way, resynchronization therapies and pacing devices have also been evaluated in relation to improving HRQOL (Cleland, Calvert, Verboven, & Freemantle, 2009). Studies have also been conducted in which HRQOL has been used as the primary outcome in evaluations of subpopulations of HF patients, like patients undergoing cognitive therapy (Dekker et al., 2012).

Furthermore, it is not only the necessity of enhancing patients' daily functioning and well-being that has made HRQOL a recognized and relevant outcome, but its prognostic ability has recently been confirmed for predicting HF mortality and hospitalization (Iqbal et al., 2010), and it has been found to be a significant indicator in advanced heart failure patients (Sullivan, Levy, Russo, Crane, & Spertus, 2007).

## HRQOL Measurement Instruments in Patients with HF

The New York Heart Association (NYHA) classification (Rossi, 1967) and the determination of walking distance (by asking patients how far they can walk or performing the 6-min walking test [6MWT] (Demers, McKelvie, Negassa, & Yusuf, 2001) have historically been the most widely used ways of measuring the functional status of HF patients and they are still in use today in clinical and research settings, despite their well-known limitations (Rector, Kubo, & Cohn, 1987; Raphael et al., 2007). Briefly, the NYHA classification (Table 1) helps doctors to place patients into one of four severity categories, based on their impression of limitations related to a patient's ordinary activities, with regard to normal breathing and varying degrees of shortness of breath and/or angina pain during physical activity. Classes range from I (no limitation) to IV (very limited). Walking tests focus only on functional capacity as a reliable method for measuring exercise tolerance (Du, Newton, Salamonson, Carrieri-Kohlman, & Davidson, 2009).

**Health-Related Quality of Life and Heart Failure, Table 1** Description of the New York Heart Association functional classification (Rossi, 1967)

| NYHA classes | Patients' functional limitations (to be judged by clinicians) |
|---|---|
| I | Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea, or anginal pain |
| II | Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea, or anginal pain |
| IIIa–IIIb | Comfortable at rest. Less than ordinary physical activity causes fatigue, palpitation, dyspnea, or anginal pain |
| IV | Symptoms of cardiac insufficiency or of the angina syndrome may be present even at rest. If any physical activity is undertaken, discomfort is increased |

In the late 1980s, researchers and clinicians mainly relied on these relatively unsophisticated instruments and other ad hoc measurements to assess the functional status of HF patients. However, some authors mentioned the need to incorporate new instruments into the evaluation of HF patients (Guyatt et al., 1989; Rector et al., 1987) and suggested (a) incorporating not only a widespread physical but also an emotional function so as to have a comprehensive account of the real limitations experienced by patients and (b) meeting a minimum of psychometric criteria.

Since then, a wide range of instruments have been increasingly used to assess the burden of the condition, both in clinical trials and clinical practice (Anand et al., 2002). On one hand, cardiologists and researchers have started to

**Health-Related Quality of Life and Heart Failure, Table 2** Disease-specific HRQOL questionnaires for heart failure patients (Garin et al., 2009)

| Questionnaire, acronym Authors (year publ.) | Mode of administration (time frame) | Response options | Domains | (No. items) | Range of scores |
|---|---|---|---|---|---|
| Minnesota Living with Heart Failure Questionnaire, MLHFQ<br>Rector et al. (1987) | Self-administered (last month) | 6-point Likert scale (0–5) | Physical<br>Emotional<br>Total | (8)<br>(5)<br>(21) | 0–105 Best to worst |
| Quality of Life Questionnaire for Severe Heart Failure, QLQ-SHF<br>Wiklund et al. (1987) | Self-administered (–) | VAS<br>6-point Likert scale | Psychological<br>Physical activity<br>Life dissatisfaction<br>Somatic symptoms<br>Total | (7)<br>(7)<br>(5)<br>(7)<br>(26) | 0–130 Best to worst |
| Chronic Heart Failure Questionnaire, CHFQ<br>Guyatt et al. (1989) | Interviewer-administered (last 2 weeks) | 7-point Likert scale (1–7) | Dyspnea<br>Fatigue<br>Emotional<br>Total | (5)<br>(4)<br>(7)<br>(16) | 16–112 Worst to best |
| Kansas City Cardiomyopathy Questionnaire, KCCQ<br>Green et al. (2000) | Self-administered (last 2 weeks) | 5-6-7-p Likert scale (1–5/6/7) | Physical limitation<br>Symptoms<br>Self-efficacy<br>Social limitation<br>Quality of life<br>Total | (6)<br>(8)<br>(2)<br>(4)<br>(3)<br>(23) | 0–100 Worst to best |
| Left Ventricular Dysfunction Questionnaire-36, LVD<br>O'Learly et al. (2000) | Self-administered (*these days*) | Dichotomous (true, false) | Total | (36) | 0–100 Worst to best |

incorporate generic HRQOL instruments into their evaluations of HF patients. A search for the measures used in HF clinical trials before 2000 identified 13 generic instruments (al-Kaade & Hauptman, 2001) including the Sickness Impact Profile, the General Well-Being Index, and the Nottingham Health Profile. Today, generic HRQOL instruments (such as the EQ-5D (Flynn et al., 2012) and the SF-36 (Naveiro-Rilo et al., 2012) are used in patients with HF mainly in order to compare their burden with that of other populations (disorders) or to calculate the loss of QALYs (Cleland et al., 2009). They are frequently used together with a disease-specific instrument for evaluating treatment or intervention efficacy under more targeted constructs.

HF-specific instruments were developed in the late 1980s and the 1990s, but their use has only been consolidated within the last decade. A recent systematic review (Garin et al., 2009) identified five standardized and structured questionnaires specifically developed for HF patients (Table 2):

- The Minnesota Living with Heart Failure Questionnaire (MLHFQ) (Rector et al., 1987) was developed in 1987 in the USA by Thomas Rector to assess the impact of HF on HRQOL. The questionnaire is self-administered and it consists of 21 items: physical domain (eight items), emotional domain (five items), and eight items which were not originally factored into physical or emotional domains but are part of the MLHFQ's total score. Response options are presented as a 6-point Likert scale (0–5), from "no impairment" to "very much impairment." The questionnaire is summarized in three scores: total (range 0–105, from better to worse HRQOL), physical (range 0–40), and emotional (range 0–25).
- The Quality of Life Questionnaire for Severe Heart Failure (QLQ-SHF) (Wiklund, Lindvall, Swedberg, & Zupkis, 1987) was developed in 1987 and focused on patients suffering from severe HF in Sweden. The questionnaire has a total of 26 items and five specific scores (psychological, physical activity, life dissatisfaction, and somatic

symptoms), plus a total score. Some of the items are answered on a visual analogue scale (VAS) and others using 6-point Likert scales. The QLQ-SHF is self-administered, and a higher score indicates a poorer HRQOL.

- The Chronic Heart Failure Questionnaire (CHFQ) (Guyatt et al., 1989) was developed in Canada by Gordon Guyatt and his group, who aimed to measure the subjective aspects of health status in clinical trials in heart failure and, specifically, longitudinal change over time within patients. The CHFQ is interviewer-administered and consists of 16 items divided into three different domains: dyspnea (five items, each patient eliciting five specific activities), fatigue (four items), and emotional aspects (seven items). Each of the questions uses a 7-point scale for the responses which are simply added together (without weighting) to obtain the score (higher score = better HRQOL).
- The Kansas City Cardiomyopathy Questionnaire (KCCQ) (Green, Porter, Bresnahan, & Spertus, 2000) aimed to cover the limitations of the already existing specific instruments for HF. It was developed by John Spertus and his group in the USA in early 2000 as a self-administered questionnaire. The KCCQ, with a total of 23 items, covers five different domains (physical limitation, symptoms, self-efficacy, social limitation, and quality of life) and provides two summaries: clinical and functional status. All the response options are based on Likert scales of 5, 6, or 7 points with lower scores indicating a poorer HRQOL.
- The Left Ventricular Dysfunction (LVD-36) questionnaire (O'Leary & Jones, 2000) was developed in the UK in 2000, also with the intention of overcoming some of the problems of the existing questionnaires. The LVD-36 is a self-administered 36-item questionnaire, with a single global score. Responses are dichotomous (true or false). True responses are added together and the sum is expressed as a percentage, so 100 is the worst possible score and 0 the best possible score.

The development processes for these instruments have included literature reviews and assessments of generic HRQOL instruments, along with patient and expert panels in the most recent cases. Item reduction has been based on ▶ factor analysis (MLHFQ, QLQ-SHF, and LVD-36) or on patient-rated clinical impact (CHFQ and KCCQ). All questionnaires are multidimensional, except the LVD-36, and include at least a physical domain and a domain assessing emotional/psychological aspects. Only the CHFQ presents an individualized patient profile, with some questions addressing specific activities chosen by each patient.

The ▶ reliability of the overall scores (total or global) and scores in the physical dimension showed the highest ▶ Cronbach's alpha in most of the questionnaires (ranging from 0.81 to 0.95). The intraclass correlation coefficients found by the authors in the different publications were high and similar across questionnaires and domains (ranging from 0.78 to 0.95). For the QLQ-SHF, only test-retest correlation coefficients were reported.

The SF-36, the 6-min walking test (6MWT), and the NYHA classification were common measurements comparable across all questionnaires for their ▶ construct validity assessment. The "physical functioning" dimension of the SF-36 was found to be strongly associated with the physical domains of the MLHFQ and the KCCQ and with the total score of the LVD-36 ($r = 0.65$–$0.84$). The CHFQ showed the highest correlations with the 6MWT (0.6–0.7), and KCCQ physical domain had the highest correlation with the NYHA classification (0.65), while the CHFQ domains of fatigue and dyspnea presented the lowest correlations with this functional capacity classification (0.19 and 0.22, respectively). The total scores of the MLHFQ and LVD-36 presented the highest correlations with the "social functioning" dimension of the SF-36 ($r = 0.70$). The validity criteria used in the QLQ-SHF evaluation had limited comparability with those of the other questionnaires.

The responsiveness of the MLHFQ was evaluated by means of a systematic review and meta-analyses that also include information from effectiveness studies and clinical trials. Findings showed effect size (ES) coefficients close to 0.5 (moderate effect) for exercise programs and beta-blockers. Special management programs, angiotensin-converting-enzyme inhibitors (ACEI), and pacing devices produced ES of approximately 0.8 (a large effect size). The coefficients shown by the physical and emotional domains in the special management groups were considerably lower (0.3–0.2). The highest ES found for the CHFQ were observed in outpatients who rated their overall health as “very much better” after the intervention (ES 1.2–1.9). The KCCQ has been found to detect changes after discharge (ES 0.6–3.2), while the QLQ-SHF produced low and similar ES for beta-blockers and ACEIs (estimates between −0.1 and 0.3).

The patient’s perception of the impact of HF on his or her HRQOL is a unique construct and must be measured separately from other domains such as functional status or clinical signs and symptoms. Despite all the information available on HRQOL instruments for patients suffering from HF, there is still a need for further research into the adequacy and performance of some of the HF-specific HRQOL instruments based on newer, more rigorous methods, in accordance with current standards (e.g., appropriate sample sizes, designs). Furthermore, if a methodological goal for HF clinical research is to construct a toolkit of outcome measures, it would be most effective to have each outcome measure make a unique contribution to the whole and not duplicate what other measures accomplish.

## Cross-References

- ▶ Responsiveness to change

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## Health-Related Quality of Life and Reliance on God's Help

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### Synonyms

Conscious living and god; Escape from illness with god's help; FACIT-Sp; Faith in god's help; Health and connectedness with god; Illness as chance; Positive attitudes and god; Religious coping; RGH

## Definition

Spirituality is not only the "experiential core" (content) of ritualized religiosity (form) but a complex construct which shares relevant topics with secular aspects of spirituality. The underlying motifs found in the various definitions are the (cognitive) "search for meaning," the (emotional) experience of connectedness (with God, others, and nature), and the respective realization in daily life in accordance with related ethical conduct. One may presume that spirituality could be assumed as persons' commitment to a higher principle/source which is embodied in their daily life.

## Description

Patients with chronic diseases use different strategies to deal with putatively restricted functional abilities, emotional impairments, and suffering. In several cases there is no way to "solve" their affected conditions and impairment or to find distance from negative emotions associated with their illness. As a consequence, they have to adapt and find ways to maintain physical, emotional, and spiritual health – despite their symptoms. As resources to cope in terms of beneficial external and internal loci of disease control, patients may rely on external powerful sources (*trust in medical help* and *search for information and alternative help*) and internal powers and virtues (*conscious way of living* and *positive attitudes*) (Büssing et al., 2006; Büssing, Ostermann, & Matthiessen, 2008); however, several refer to "more powerful" external resources (i.e., God, Allah, JHWH, etc.), either as a reactive strategy ("give it a try") or in terms of an unconditional trust in higher support whatever the course of life and disease may bring. Even in secular societies, spirituality/religiosity can be a source to rely on in times of need (Büssing et al., 2005; Büssing, Ostermann, & Koenig, 2007, Büssing et al., 2009a, b; Zwingmann, Müller, Körber, & Murken, 2008; Zwingmann, Wirtz, Müller, Körber, & Murken, 2006; Appel et al., 2010). In fact, spirituality/religiosity can be used to relieve stress, retain a sense of control, and maintain hope and sense of meaning and purpose in life (Thune-Boyle, Stygall, Keshtgar, & Newman, 2006).

**Health-Related Quality of Life and Reliance on God's Help, Table 1** Conceptual differentiation of the different layers of spirituality/religiosity

| Beliefs, attitudes, and convictions | Spiritual well-being | Practices (private/ organized; reactive/ interventional) |
|---|---|---|
| Religious: specific beliefs (i.e., God; resurrection, rebirth, etc.) | Religious: faith | Religious: praying, church attendance, etc. |
| Secular: scientism, philosophy, humanism, etc. | Secular: existential/ peace | Spiritual: mindfulness-based meditation, etc. |
| | | Secular: loving-kindness, etc. |

The crucial point is that, although they are interconnected, spirituality and religiosity are different concepts. Koenig (2008) raised concerns about measuring spirituality in research: Spirituality was traditionally "a subset of deeply religious people," while today it is "including religion but expanding beyond it." In fact, spirituality is often understood today as a broader and also changing concept which may overlap with secular concepts such as humanism, existentialism, and probably also with specific esoteric views (Zwingmann et al., 2010).

When talking about spirituality/religiosity, one has to differentiate specific beliefs (cognition/emotion), spiritual well-being, and specific practices (action), either within a specific institutional context or highly individual approaches (Table 1).

If one intends to analyze connections between "spirituality" and the likewise multidimensional topic quality of life, one has to be aware that one has to deal with rather unspecific constructs which may significantly overlap (i.e., spiritual well-being). With respect to spiritual well-being, as measured with the FACIT-Sp questionnaire, the sub-construct *faith* did not correlate with well-being, social support, social networks, and mood, while the sub-construct *meaning/peace* did correlate (Levine, Aviv, Yoo, Ewing, & Au, 2009). A more specific analysis of Canada, Murphy, Fitchett, Peterman, and Schover (2008) found that particularly the *peace* component correlated strongly with mental health, while the associations with respect to the sub-constructs *meaning* or *faith* were just weak. This means, it is a "secular" and less-specific aspect of spirituality which can be associated with mental health but not the circumscribed "religious" aspects of spiritual well-being. Also in German patients, we have found that *Reliance on God's Help* in response to illness, as a measure of intrinsic religiosity, was not associated with physical or mental health (Büssing, Fischer, Ostermann, & Matthiessen, 2008). Thus, there is evidence that specific dimensions such as faith or intrinsic religiosity are not necessarily associated with well-being or health-related quality of life, while unspecific dimensions such as *peace* can be associated with well-being. In fact, the underlying items of the respective *peace* subscale refer to circumscribed aspects of well-being (i.e., feeling peaceful, sense of harmony with oneself, etc.), and thus, significant associations can be expected.

Therefore, it was necessary to reanalyze already existing data pools with healthy individuals and patients with chronic disorders with respect to circumscribed variables of intrinsic religiosity and health-related quality of life (HrQoL).

## Measures and Persons

The combined data set (with respect to SF-12 data) comprised 5,046 individuals from different cohorts of either health individuals (Büssing, Ostermann, et al., 2008; Büssing, Ostermann, Neugebauer, & Heusser, 2010) or patients with chronic pain conditions (Büssing et al., 2009b), breast cancer (Büssing, Fischer, et al., 2008), and other chronic diseases (Büssing, Ostermann, et al., 2008; Büssing et al., 2010) (Table 2). The analysis here refers to a sample of 62 % healthy older individuals, 15 % with cancer, 14 % with other chronic diseases, 8 % who already experienced acute diseases/traumata (in most cases it is assumed that the individuals experienced their acute trauma/illness several years ago, and thus, this group should not be overestimated).

As a measure of intrinsic religiosity in response to illness, the 5-item scale *Reliance on God's Help* (RGH, Cronbach's alpha = 0.9) deriving from the AKU questionnaire (Büssing et al., 2006; Büssing, Ostermann, & Matthiessen, 2008) was used. The items address unconditional trust ("Whatever may happen, I trust in a higher power which carries me through"), awaiting belief ("I have strong belief that God will help me"), faith as a resource ("My faith is a strong hold, even in hard times"), an actional component ("I pray to become healthy again"), and a behavioral component ("I try to live in accordance with my religious convictions"). The specific term "God" was used just one time.

To measure physical and mental HrQoL, the Medical Outcomes Study Short-Form Health Survey SF-12 (Resnick & Nahm, 2001; Ware, Kosinski, & Keller, 1996) was used. The instrument measures particularly physical and mental functioning but also mood states, pain disability, and affected social contacts.

Additional instruments were the 3-item scale *Escape from Illness* as an indicator of an avoidance-escape strategy to deal with illness (Büssing, Matthiessen, & Mundle, 2008) and internal adaptive coping strategies derived from the AKU questionnaire, i.e., *Positive Attitudes*, *Conscious Living*, and *Reappraisal: Illness as Chance* (Büssing et al., 2006; Büssing, Ostermann, & Matthiessen, 2007, 2008).

## Reliance on God's Help and Health-Related Quality of Life

The categorized disease groups differed significantly with respect to gender, age, and health status (Table 2). Particularly patients with cancer had the highest RGH. Although this cohort had a predominance of women when compared to the other individuals, their RGH scores did not differ with respect to gender ($F = 0.0$; $p = .98$).

As shown in Table 3, RGH and HrQoL were just marginally intercorrelated:

- In healthy individuals (mean age, 62.9 ± 11.6 years), RGH correlated just marginally with SF-12's physical health and *Escape* ($p < .0001$) but not significantly with mental

**Health-Related Quality of Life and Reliance on God's Help, Table 2** Characteristics of individuals with complete SF-12 data set

| | | Gender (women/men) | Age (years) | SF-12's physical health | SF-12's mental health | Escape from illness (0–100) | RGH (0–100) |
|---|---|---|---|---|---|---|---|
| Healthy (n = 3,139) | Mean | 0.4 | 62.9 | 49.6 | 53.6 | 27.2 | 53.3 |
| | SD | | 11.6 | 8.0 | 7.6 | 21.8 | 34.6 |
| Chronic diseases (n = 725) | Mean | 0.5 | 63.3 | 41.0 | 50.4 | 33.9 | 53.1 |
| | SD | | 11.2 | 11.3 | 10.9 | 26.4 | 33.6 |
| Acute diseases (n = 389) | Mean | 0.3 | 66.1 | 42.1 | 52.9 | 29.9 | 55.4 |
| | SD | | 9.8 | 10.0 | 8.1 | 21.8 | 33.4 |
| Cancer (n = 782) | Mean | 1.7 | 63.9 | 43.2 | 49.9 | 33.7 | 58.6 |
| | SD | | 9.3 | 10.1 | 9.9 | 23.3 | 34.3 |
| All individuals (n = 5,046) | Mean | 0.5 | 63.3 | 46.8 | 52.5 | 29.4 | 54.2 |
| | SD | | 10.5 | 9.7 | 8.7 | 22.9 | 34.4 |
| F-value | | | 12.3 | 276.7 | 53.9 | 27.9 | 5.3 |
| p-value | | <.0001 | <.0001 | <.0001 | <.0001 | <.0001 | .001 |

Data source: Büssing, Ostermann, et al. (2008), Büssing, Fischer, et al. (2008), Büssing et al. (2009, 2010)

**Health-Related Quality of Life and Reliance on God's Help, Table 3** Correlation analyses between RGH, HrQoL, and internal adaptive coping strategies

| | Reliance on God's help | | | | |
|---|---|---|---|---|---|
| | Healthy individuals | Acute diseases | Chronic diseases | Cancer | Breast cancer |
| | N = 3,075 | N = 389 | N = 718 | N = 776 | N = 377 |
| SF-12's physical health | $-.082^{**}$ | .050 | $-.109^{**}$ | −.054 | .000 |
| SF-12's mental health | −.026 | −.006 | .002 | −.041 | $-.125^{*}$ |
| Escape from illness | $.078^{**}$ | .073 | .078 | $.127^{**}$ | $.174^{**}$ |
| Positive attitudes | $.174^{**}$ | $.120^{*}$ | $.149^{**}$ | $.128^{**}$ | $.157^{**}$ |
| Conscious living | $.211^{**}$ | $.253^{**}$ | $.264^{**}$ | $.218^{**}$ | $.147^{**}$ |
| Illness as chance | $.414^{**}$ | $.403^{**}$ | $.365^{**}$ | $.439^{**}$ | $.514^{**}$ |

With respect to the correlation analyses, $r > .5$ was regarded as a strong correlation, r between .3 and .5 as a moderate correlation, while r between .1 and .3 is regarded as a weak correlation, and $r < .1$ as a negligible correlation (marginal).
Data source: Büssing, Ostermann, et al. (2008), Büssing, Fischer, et al. (2008), Büssing et al. (2009, 2010)
** $p < 0.001$; * $p < 0.02$ (Pearson)

health. None of the underlying items of the RGH scale correlated significantly with HrQoL.

- In individuals experiencing acute diseases or trauma, RGH correlated neither with physical/mental health nor with *Escape*. None of the RGH items correlated significantly with the test variables.
- In patients with various chronic conditions, RGH correlated just marginally with SF-12's physical health but neither with mental health nor with *Escape*. Particularly the item "I pray to become healthy again" correlated weakly with physical health ($r = -.137$; $p < 0.0001$), all other items just marginally (data not shown).
- In patients with cancer, RGH did not correlate with physical or mental health and just weakly with *Escape from illness*. Moreover, in women with breast cancer, RGH correlated neither with fatigue (CFS-D, $r = .083$; n.s.) nor with life satisfaction (BMLSS, $r = .093$; n.s.). In this population, the RGH items correlated negatively with mental health,

**Health-Related Quality of Life and Reliance on God's Help, Table 4** HrQoL and internal adaptive coping strategies of patients with chronic disease

| | | SF-12's physical health | SF-12's mental health | Escape from illness | Positive attitudes | Conscious living | Illness as chance |
|---|---|---|---|---|---|---|---|
| Low RGH ($n = 572$) | Mean | 42.85 | 51.06 | 29.66 | 71.73 | 78.02 | 33.60 |
| | SD | 10.69 | 10.19 | 24.03 | 16.27 | 14.97 | 23.72 |
| Intermediate RGH ($n = 315$) | Mean | 41.84 | 50.55 | 33.00 | 71.37 | 78.20 | 42.29 |
| | SD | 10.18 | 9.95 | 22.92 | 15.05 | 13.97 | 23.22 |
| High RGH ($n = 996$) | Mean | 41.74 | 50.64 | 34.91 | 75.58 | 84.68 | 55.62 |
| | SD | 10.54 | 10.01 | 24.69 | 15.34 | 13.87 | 26.17 |
| All individuals ($n = 1{,}883$) | Mean | 42.10 | 50.75 | 32.99 | 73.70 | 81.58 | 46.70 |
| | SD | 10.53 | 10.05 | 24.30 | 15.70 | 14.60 | 26.84 |
| F-value | | 2.1 | 0.4 | 8.5 | 15.3 | 50.4 | 146.7 |
| p-value | | n.s. | n.s. | <.0001 | <.0001 | <.0001 | <.0001 |

Low RGH, < 40; intermediate THG, 40–60; high THG, > 60
Data source: Büssing, Ostermann, et al. (2008), Büssing, Fischer, et al. (2008), Büssing et al. (2009, 2010)

i.e., "Whatever may happen, I trust in a higher power which carries me through" ($r = -.132$; $p = .010$), "My faith is a strong hold, even in hard times" ($r = -.126$; $p = .015$), "I pray to become healthy again" ($r = -.113$; $p = .029$), "I try to live in accordance with my religious convictions" ($r = -.108$; $p = .038$), and "I have strong belief that god will help me" ($r = -.107$; $p = .038$). Physical health did not correlate significantly with the items of the RGH scale (data not shown).

Additional analyses revealed that patients with chronic conditions, either with high, intermediate, or low RGH (scores > 60, between 40 and 60, and < 40, respectively), showed no significant differences with respect to physical and mental health scores (Table 4), while individuals with high RGH had higher internal coping strategies (i.e., *illness as chance*, *conscious living*, and *positive attitudes*).

Regression analyses with the relevant variables indicated that RGH can be predicted best by *illness as chance*, age, *conscious living*, healthy situation, and female gender, while neither SF-12's physical/mental health components nor *Escape* was of significant relevance (Table 5).

**Health-Related Quality of Life and Reliance on God's Help, Table 5** Predictors of intrinsic religiosity (regression analysis)

| Dependent variable: reliance on God's help | | | |
|---|---|---|---|
| Model: $R^2 = .23$ | Beta | T | p |
| SF-12's physical health | −.006 | −.434 | .664 |
| SF-12's mental health | −.014 | −.982 | .326 |
| Escape from illness | .021 | 1.469 | .142 |
| Conscious living | .129 | 9.510 | .000 |
| Illness as a chance | .389 | 28.349 | .000 |
| Female gender | .033 | 2.362 | .018 |
| Age categories | .190 | 13.562 | .000 |
| Educational level | −.011 | −.884 | .377 |
| Healthy individuals | .061 | 4.325 | .000 |

Data source: Büssing, Ostermann, et al. (2008), Büssing, Fischer, et al. (2008), Büssing et al. (2009, 2010)

Thus, also in German individuals, either healthy or with chronic diseases, RGH was associated negatively with physical HrQoL, albeit to a marginal or weak extent. This could indicate that intrinsic religiosity was used by a fraction of individuals in response to physical health problems. In fact, in patients with chronic diseases, "praying to become healthy again" was associated with reduced physical health, and thus, it is a reactive strategy. In contrast, a significant association between RGH and mental health was observed only in women with breast cancer ($r = -.125$; $p = .015$; mean age, 59.7 ± 7.2 years), not in the cohort of women with cancer in general ($r = -.064$; n.s.; mean age, 64.2 ± 11.0 years). Of importance was the fact that RGH was moderately or even strongly associated the reappraisal strategy to view illness as a chance and weakly also with the internal adaptive coping strategies *conscious living* and *positive attitudes* (Tables 3 and 4). This means, for a group of patients with chronic diseases, intrinsic religiosity can be regarded as a resource to cope, to behave differently, and to change the perspectives in life (i.e., "reflect on what is essential in life," "regard illness as a chance for development," "live consciously each and every day," "change life to get well," etc.).

These findings are apparently in contrast to those of Tarakeshwar and coworkers (2006) who reported that in patients with advanced cancer, positive religious coping (R-COPE) was associated with better overall QoL (McGill QOL Questionnaire). However, looking at the underlying dimensions, it became clear that neither the physical nor the psychological aspects of QoL correlated with religious coping but the existential and support dimensions (Tarakeshwar et al., 2006). Moreover, religious coping was associated with reports of greater physical symptoms. This indicates that religious coping strategies were used because of an affected physical health situation – and therefore, patients were in search of support. Similarly Tarakeshwar et al. mentioned that "patients who experienced greater physical symptoms turned to religion more often for strength, comfort, and guidance."

To address these issues in future analyses, specific multidimensional measures (rather than aggregated scales or indices) and longitudinal data are needed. For this analysis, a short and circumscribed scale to measure intrinsic religiosity as a strategy to deal with illness was used. This 5-item scale addresses unconditional trust, awaiting belief, faith as a resource, an actional, and a behavioral component. Patients may use specific facets of spirituality acutely as a resource in times of need (i.e., praying, church attendance, meditation, etc.) but not necessarily all the time during long-term courses of chronic illness. In case their expectations are "fulfilled," patients may feel affirmed in their faith and specific beliefs and attitudes, and thus, their spiritual well-being might be high, while in other cases, they may quit their specific religious activities, and thus, their spiritual well-being may decrease.

But what about the secular forms of spirituality – could we expect strong associations with HrQoL? There are at least several hints that the existential aspects of spirituality are in fact associated with health and well-being (Canada et al., 2008; Davison & Jhangri, 2010; Levine et al., 2009; Tarakeshwar et al., 2006; Tsuang, Simpson, Koenen, Kremen, & Lyons, 2007). In patients with chronic kidney diseases, religious issues were either not or just weakly associated with SF-36's QoL dimensions, while particularly existential well-being was moderately associated with several domains, particularly mental health (Davidson & Jhangri, 2010). Relying on the fact that the associations between spiritual well-being and health outcomes could be uniquely explained by existential well-being, Tsuang et al. (2007) specifically suggested "to distinguish between explicitly religious variables and others that more closely approximate the psychological construct of personal well-being" (Tsunag et al.). In fact, further research is needed, particularly in secular societies.

## Cross-References

- ▶ Assessment of Spirituality and Religious Sentiments (ASPIRES) Scale
- ▶ Coping with Diagnosis
- ▶ Meaning in Life
- ▶ Peace of Mind
- ▶ Ways of Coping Checklist

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## Health-Related Quality of Life in ED-Short Form (HeRQoLED-S)

► Caregivers of Patients with Eating Disorders, Quality of Life

## Health-Related Quality of Life in North Carolina (USA), Rural and Non-Rural Disparities

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### Definition

Assessing rural/non-rural disparities in health-related quality of life (HRQoL) in North Carolina (NC) has three components:

1. A comparison of persons living in rural and non-rural (e.g., suburban, urban) areas
2. A focus on ► quality of life (QoL) deriving from health status and functioning (as opposed

to QoL defined based on non-health-related criteria, e.g., Furuseth & Walcott, 1990), typically measured by the Short Form 12 Health Survey (▶ SF-12) or the healthy days measures from the BRFSS and divided into physical and mental health components

3. A focus on residents of NC

## Description

To date, only one article has examined differences in HRQoL between people living in rural versus non-rural areas of NC, although other work has explored the related issues of rural/non-rural disparities in HRQoL (without a focus on NC) and HRQoL in NC (without attention to rural/non-rural differences).

Research on rural/non-rural disparities in HRQoL agrees that rural residents exhibit lower average levels of both physical and mental HRQoL, although the differences are typically larger for physical HRQoL. These disparities hold across racial lines, geographic contexts, and populations with diverse disease profiles (Kovac, Mikuls, Mudano & Saag, 2006; Weeks et al., 2004; Weeks, Wallace, Wang, Lee, & Kazis 2006). While these studies demonstrate persistent rural/non-rural disparities, they do not indicate why these health differences exist.

Work on HRQoL in NC has found worse physical and mental HRQoL for those of lower socioeconomic status (measured as either education or income; Callahan et al., 2008; Miles, Proescholdbell & Puffer, 2010; Wubben & Porterfield, 2005), with chronic obstructive pulmonary disease (Brown et al., 2010), and with joint diseases such as arthritis or fibromyalgia (Callahan et al., 2008; Miles et al., 2010). Studies suggest that those with cardiovascular disease and higher BMI also have lower physical HRQoL, but not lower mental HRQoL (Callahan et al.; Miles et al., 2010). Among rural respondents, community ▶ poverty has been shown to predict lower physical and mental HRQoL (Callahan et al.) and proximity to livestock operations to increased physical symptoms (Wing & Wolf, 2000). Most studies on HRQoL in NC used subsets of the NC population such as clinical samples and therefore may not be generalizable to all NC residents.

To date, Miles et al. (2010) have published the only study that examines rural/non-rural HRQoL disparities in NC. Using a sample of United Methodist Church (UMC) clergy, they found lower levels of physical HRQoL among rural residents, but no clear differences in mental HRQoL. They argued that differences in physical HRQoL are partially attributable to the lower incomes, higher BMI, and higher levels of joint disease among rural respondents. More importantly, they provided evidence that these effects are due to the rural context rather than to self-selection processes. This claim is based on the fact that UMC clergies are periodically reassigned by denomination leaders to serve in churches spread across NC, suggesting that selection into rural areas is nonvoluntary, and on evidence that rural/non-rural disparities in HRQoL widen as time spent in a rural area increases.

## Discussion

Extant research suggests rurality predicts lower levels of physical HRQoL and, to a lesser degree, lower mental HRQoL, and that this pattern holds in NC. Studies of HRQoL in NC that have linked HRQoL to socioeconomic status, BMI, and joint disease are consistent with Miles et al.â s (2010) claim that these factors partially explain the lower levels of physical HRQoL in NC rural areas. Evidence also indicates that the links between rurality and HRQoL may be causal. This is supported by the evidence against self-selection into rural areas presented by Miles et al. (2010), as well as the demonstrated relationships between HRQoL and various contexts often found in rural areas (e.g., poor communities, livestock operations).

Given the limited nature of the samples used in these studies, considerably more work must be done before firm conclusions concerning rural/non-rural disparities in HRQoL in NC can be drawn. Additional work is needed to isolate the factors that explain these differences and to examine the claim that rurality has a causal relationship to HRQoL. Addressing these shortcomings will require longitudinal data that capture movement into and out of rural areas and contain extensive measures of health to control for baseline health biases. Progress could also be made by studying other populations who periodically and nonvoluntarily relocate to diverse geographic areas (e.g., military).

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▶ Health-related Quality of Life Measures

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# Health-Related Quality of Life Measures

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## Synonyms

HRQoL

## Definition

▶ Quality of life (QoL) is a term frequently used to describe the physical, mental, and social well-being of an individual (World Health Organization [WHO], 1948). Although there is no universally accepted definition of QoL, one that is widely used has been developed by the World Health Organization:

> An individuals' perception of their position in life in the context of their culture and value system in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment. (WHO, 1996, World Health Organization Quality of Life Group [WHOQOL], 1995, 1996, p. 1)

Measuring QoL is complicated by the fact that assessments of this construct are often disease specific and/or targeted for particular populations, e.g., persons with HIV/AIDS, cancer sufferers, victims of traumatic brain injury, adolescents, and the elderly. The six conceptually derived domains of QoL recognized by the World Health Organization include physical health, psychological health, independence, social well-being, environmental factors, and spiritual well-being. Quality of life should not be confused with ► life satisfaction or functional status.

A major aspect of global QoL is health-related quality of life (HRQoL), a construct that is similarly broadly defined. HRQoL is a multidimensional concept that includes a person's

> subjective perceptions and assessments of their health. These perceptions and assessments cannot be measured by blood testing, electroencephalography, MRI, or any other 'objective' testing. (Spilker, 1990, p. 3)

It has been suggested that HRQoL measures should include assessments of overall health and physical well-being, including presenting symptoms, as well as emotional, cognitive, role, social, and ► sexual functioning (Wilson, 2004). HRQoL is predicted by a number of variables in a person's life, including socioeconomic status, behavioral factors, disease state, symptoms, and functioning.

## Description

### Theory

Many measures of QoL have been developed out of a pragmatic need for clinically appropriate tools for use in health-care settings, rather than the need to develop conceptually based and theoretically derived measures of the phenomena. There exists a considerable gap in the literature regarding sound theoretical foundations for the general concept of QoL, its measurement, and outcomes. Much conceptual research on QoL deals with its manifestations across persons with an array of problems, diseases, or demographic characteristics. An example of such a highly specific work of this nature is the theoretical framework developed by Vidrine and his colleagues related to HRQoL among persons with HIV/AIDS (Vidrine, Amick, Gritz & Arduino, 2005). Another problem-specific approach to QoL theory is that developed by Frisch relating to a quality of life model of clinical depression (Frisch, 1998). While valuable in these delimited areas, such focused theoretical and empirical research has made the development of a comprehensive or generic theoretical foundation for the constituents of the concept of quality of life very difficult. A QoL scale developed for use with the general population will not assess the unique issues relating to persons experiencing particular problems (e.g., cancer) which may erode the quality of one's life. Conversely, an issue- or population-specific scale may be inappropriate to be administered to the general population.

One theoretical approach has emerged from the Quality of Life Research Center in Denmark (http://www.livskvalitet.org/) and is derived from the work of the psychologist Abraham Maslow's theory of needs and includes a variety of dimensions including well-being, ► satisfaction with life, ► happiness, ► meaning of life, realizing life potential, fulfillment of needs, and objective factors (Ventegodt, Merrick, & Andersen, 2003a). It is more a philosophical approach to the issue, but one the investigators laudably attempt to flesh out via the development of a psychometrically sound instrument (Ventegodt, Merrick, & Andersen, 2003b). This work is ongoing.

Related theoretical work is being undertaken at the Australian Center on the Quality of Life, located at Deakin University (http://www.deakin.edu.au/research/acqol/introduction/). Based on a model of QoL involving seven distinct domains, these researchers have developed a global QoL scale (described below). Most other measures of QoL are also multidimensional and assess the global construct of general well-being; broad domains of physical, psychological, economic, spiritual, and social well-being; and specific components of each of these domains.

Given the very broad definitions of QoL and HRQoL, it should be expected that there are numerous instruments designed to assess these phenomena.The Mapi Research Institute supported a website called PROQOLID – the Patient Reported Outcomes and Quality of Life Instruments Database (see www.QOLID.org). This valuable resource maintains a database of over 690 original QoL instruments, some of which are generic, others specific to particular diseases, and others to specific populations.

Below is an overview of four of the most frequently used and psychometrically valid and reliable instruments relating to evaluating quality of life.

## General Quality of Life Measures

### The World Health Organization Quality of Life Assessment (WHOQOL)

This instrument was developed in multiple settings across the globe by the World Health Organization in an effort to generate a cross-culturally appropriate, psychometrically derived instrument (World Health Forum Quality of Life Group, 1998a). The WHOQOL is available in 43 different languages. The time recall is the previous 2 weeks, which presents little to no burden for most respondents. The original psychometric testing of the WHOQOL was administered across 15 testing centers across the globe and included a diverse sample of respondents ($N = 4{,}802$) including both healthy respondents and those with specific diseases and health conditions. The WHOQOL contains 100 items covering four domains and 24 facets of quality of life. Structural equation modeling supported a four-domain model comprised of factors related to physical capacity, psychological variables, social relationships, and environmental circumstances. The 24 facets are ▶ pain and discomfort (with a factor loading of $r = 0.76$); energy and ▶ fatigue ($r = 0.82$); sleep and rest ($r = 0.87$); positive feelings ($r = 0.78$); thinking, learning, memory, and concentration ($r = 0.75$); ▶ self-esteem, bodily image, and appearance ($r = 0.80$); negative feelings ($r = 0.86$); mobility ($r = 0.89$); ▶ activities of daily living ($r = 0.83$); dependence on medication or treatments ($r = 0.91$); working capacity ($r = 0.93$); personal relationships ($r = 0.68$); ▶ social support ($r = 0.81$); ▶ sexual activity ($r = 0.80$); physical safety and security ($r = 0.73$); home environment ($r = 0.86$); financial resources ($r = 0.88$); ▶ health and social care (availability and quality) ($r = 0.80$); opportunities for acquiring new information and skills ($r = 0.80$); participation in and new opportunities for recreation/leisure ($r = 0.79$); ▶ physical environment (pollution/noise/traffic/climate) ($r = 0.65$); transportation ($r = 0.83$); and ▶ spirituality/religion/personal beliefs ($r = 0.85$) (World Health Forum Quality of Life Group, 1998b).

As completing 100 items may be too burdensome for some respondents, the WHOQOL has been adapted into a shortened instrument, the WHOQOL-BREF. Also tested in multiple locations around the globe, the initial appraisal of the WHOQOL-BREF included a diverse sample of individuals of various ages and health statuses ($N = 2369$). This instrument contains 26 items evaluating the original four WHOQOL domains of QoL: physical health (with a factor loading of $r = .80$), psychological ($r = .76$), social relationships ($r = .66$), and environmental factors ($r = .80$). The WHOQOL-BREF is a psychometrically reliable, valid, and brief assessment measure useful in research and practice assessments relating to individuals' quality of life. Its scores correlate very highly with the longer version of the WHOQOL and is a useful substitute when a shorter instrument is indicated.

### The Comprehensive Quality of Life Scale

The *Comprehensive Quality of Life Scale* (ComQol) was developed through the Australian Centre on Quality of Life (http://www.deakin.edu.au/research/acqol/instruments/comqol-scale/comqol-a5.pdf). Three versions are available, one for use with the general population, one for use with persons who have an intellectual disability or other form of cognitive impairment, and a third for use with school-aged adolescents. The ComQol is multidimensional, providing separate assessments for seven distinct domains – ▶ material well-being, health, ▶ productivity, intimacy, safety, place in community, and ▶ emotional well-being. It assesses both objective and subjective components of each dimension and is psychometrically sound, being reliable, stable, sensitive, and valid. Normative data are also available. The objective domains of the ComQoL relate to culturally relevant measures of well-being, and the subjective domains assess satisfaction, weighted by the factor's importance to the individual. The ComQol usually takes about 15–20 min to complete and is best seen as a research instrument, not one suitable for clinical assessment purposes, due to its length.

### Health-Related Quality of Life Measures

Medical Outcomes Study (SF-36/SF-36v2, SF-12/SF-12v2, SF-8)

The Medical Outcomes Study (MOS) is a national observational study of patient outcomes in different systems of care (Stewart, Hays & Ware, 1988). Initial testing of the MOS Short Form (SF) was conducted on a diverse sample of adult patients across the United States ($N = 11{,}186$). Domains assessed with the 20 items on the MOS Short Form included physical functioning, role functioning, social functioning, mental health, health perceptions, and pain.

Several adaptations and derivatives of HRQoL measures have been generated from the MOS and further evaluated, including the *SF-36v2*, the *SF-12v2* (12 items), and the *SF-8* (8 items) with each shorter version being psychometrically derived from its longer predecessor. To assess overall scores of physical and mental health, eight domains are examined. Summary scores of physical health examine physical functioning, role functioning (physical), bodily pain, and general health. The domains included under summary scores of mental health are vitality, role functioning (emotional), social functioning, and mental health. Both the *SF-36v2* and the *SF-12v2* assess these domains and have been developed for use in international populations. The *SF-8* is a collection of 8 single-item indicators for each of the domain evaluated on the *SF-36v2* (Ware & Gandek, 1998; Ware, Kosinski, Dewey & Gandek, 2001). The ▶ internal consistency and ▶ test-retest reliability of the shorter versions of the SF-36 are psychometrically satisfactory and a website provides constantly updated information about the SF-36 instrument and its briefer versions, including user's manuals, scoring software, and recent research studies (www.sf-36.org).

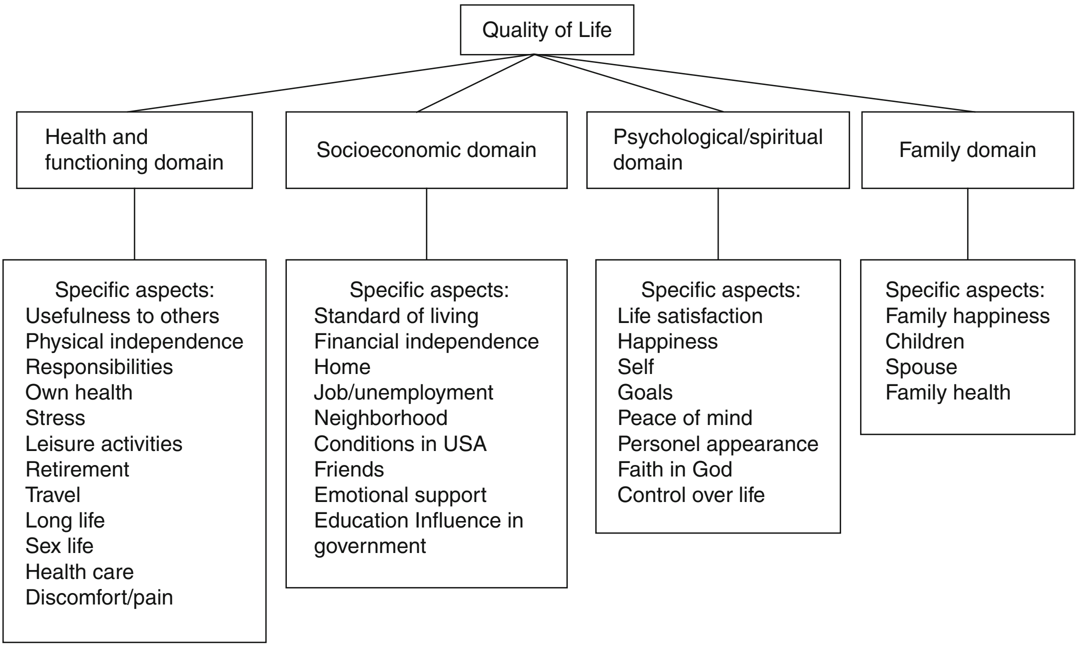
### Centers for Disease Control and Prevention Health-Related Quality of Life Measure (CDC HRQOL-14)

This measure was created by the United States' Centers for Disease Control and Prevention (CDC) to capture HRQOL among populations in order to identify and monitor social and individual determinants of physical and mental health over time (Moriarty, Zack, & Kobau, 2003). The CDC HRQOL-14 guides epidemiological researchers in identifying and estimating ▶ public health needs for specific populations and can be used in evaluations of the cost-benefits and cost-effectiveness of programs intended to improve the health of individuals.

Three modules comprise the CDC HRQOL-14: the Healthy Days Core Module, the Activity Limitations Module, and the Healthy Days Symptoms Module. The four-item Healthy Days Module has been in use by the CDC since 1993 and has been incorporated into numerous studies of population health-related quality of life such as the Medicare Health Outcome Survey in the United States. The core module asks respondents to assess their overall health using individual global indicators of HRQOL and activity limitation. Respondents are asked to identify the number of days over the most recent 30-day period in which their physical and mental health was poor. Finally, respondents are asked how many days their physical or mental health impaired their daily activities. An additional 10 items inquire about pain, depression, ▶ anxiety, sleeplessness, vitality, and the cause, duration, and severity of a current activity limitation. A summary index of overall unhealthy days is then calculated based on these responses rather than psychometrically derived weights. Over 30 studies have reported on the validity of the CDC HRQOL-14 among various populations including adolescents (Zullig, Valois, Huebner, & Drane, 2005), older adults (Dominick, Ahern, Gold, & Heller, 2002), and individuals with anxiety (Sullivan et al., 2007), arthritis (Mielenz, Jackson, Currey, DeVellis, & Callahan, 2006), cancer (Linden, Yi, Barroetavena, MacKenzie, & Doll, 2005), and spinal cord injury (Andresen, Fouts, Romeis, & Brownson, 1999). This instrument has also been shown to be a reliable measure of HRQoL, though may be less reliable when studying older populations (Andresen, Catlin, Wyrwich, & Jackson-Thompson, 2003).

### Discussion

Quality of life is now seen as a critical focus of scientific study, including its composition, correlates, predictive indices, and buffers and



**Health-Related Quality of Life Measures, Fig. 1** Different aspects of health-related quality of life

how it is affected by exposure to diseases and environmental events. It may be contended that the systematic assessment of QoL should be included in any intervention study intended to improve human health and well-being. Treatment outcomes pertaining to a given illness or of a therapy intended to improve psychosocial functioning may have ramifications extending far beyond those related to a narrow focus on problem-specific symptomatology. A disease-specific treatment that *also* enhances overall quality of life can be seen as a more satisfactory therapy than one which cures the illness but has little impact on quality of life. Some therapies may be clinically effective yet exert an iatrogenic effect on QoL, and these possible negative impacts can only be ascertained if QoL measures are included in the array of outcome variable.

HRQoL has been widely recognized as a valid indicator of health outcomes since first introduced by the World Health Organization in 1948. HRQoL is a valid health indicator for both individuals and populations and measures well-being beyond that which traditional biologic outcome measures are able. Instruments designed to measure HRQoL should fully encompass the phenomena, including functioning and well-being. HRQoL instruments should also be simple, easy to read, and culturally appropriate. Furthermore, HRQoL instruments should be both valid, measuring what it is supposed to measure, and reliable, producing consistent results upon further testing. However, the psychometric properties of a measure are only as strong as the sample obtained to test the instrument. Instruments tested on general populations may produce different outcomes when tested in samples of patients. The conceptual model on the different aspects of HRQoL can be seen in the following figure (Fig. 1).

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## Health-Related Quality of Life of Children with Epilepsy Study (HERQULES)

► Mothers' Reports of Child Outcomes in Those with New-Onset Epilepsy

## Healthy Cities

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### Synonyms

Healthy environment

## Definition

Healthy City as one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and in developing to their maximum potential (World Health Organization, 1998, Health Promotion Glossary).

## Description

A city's health profile consists first and foremost of a quantitative and qualitative description of the health of its inhabitants and the factors which influence their ▶ health (De Hollander & Staatsen 2003; Diez-Roux, 2002; Schino, 2006). In order to build up a profile of the health of a city's population, a detailed analysis of the ▶ community's needs and resources needs to be carried out.

To facilitate the development of the Healthy Cities project, it is essential that there should be the involvement and participation of all those people who, in various capacities, are responsible for the city's ▶ healthcare services and programs, the aim being to build up a network of actions and interventions on health.

The sociological analysis of a city's health has focused its attention on such topics as socio-territorial changes and the impact of these types of changes on health. It is those sectors of the population with the most limited means for addressing these problems who tend to be the main victims of environmental problems (Andruilis 2000).

A healthy city is a fundamental factor in improving the ▶ quality of life of its inhabitants, since cities wield an ever-increasing influence on the health of their populations with regard to practically every single aspect of the latter's ▶ well-being: these aspects include food, air and water, but also all the available health services, safety, and social capital. In modern times, cities have been both the source of serious dangers to health and important innovations in the ▶ public health arena (Galea, Freudenberg, & Vlahov, 2005).

The scientific community is focusing its attention ever increasingly on the relationship between human health and the state of health of the environment in which we live (Centers for Disease Control and Prevention, 2002). Despite these considerations, a unitary approach which brings together all the different factors which bear an influence on the health of the urban population is still lacking (Tognetti Bordogna, 2008; Donisetti, 2005; Kaltenthaler, Meheswaran, & Beverley, 2004).

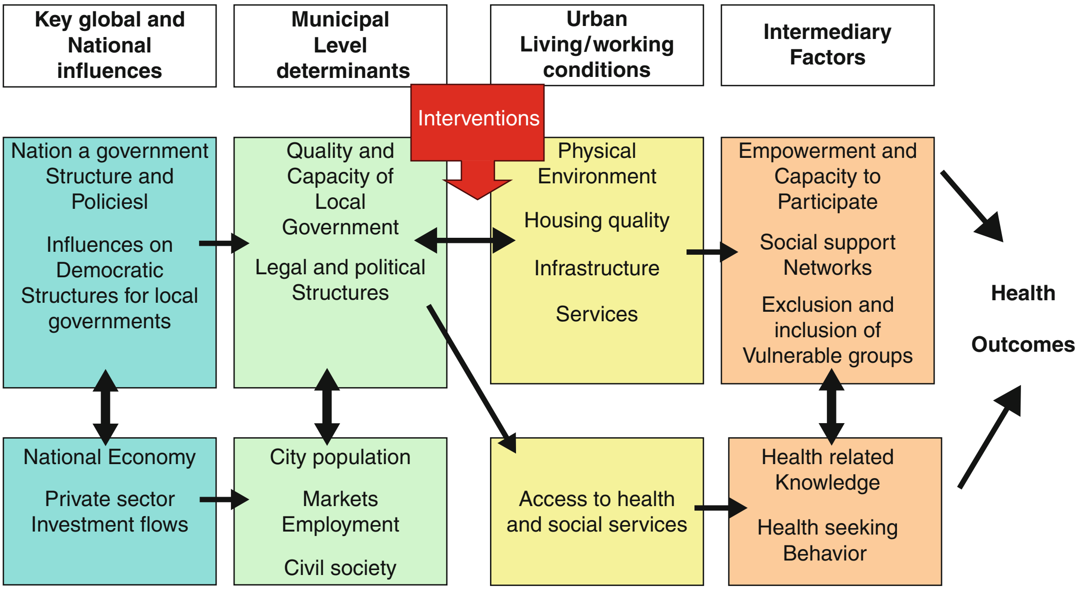
Urban populations are defined on the basis of their dimension, density, distribution, diversity, and complexity, and the health of the population is likewise dependent upon these factors (Tognetti Bordogna, 2009).

Although urbanization and the features of urban living are social paradigms, the study of the relationship between urban living and health also lies firmly within the area of research into social epidemiology and social medicine.

The social and physical environments which define the urban context are modeled on such communal factors as government or civil society and on national and global trends which set the context within which local factors operate. The conceptual reference framework assumes that the urban environment (physical, social, economic, and political), broadly speaking, directly or indirectly affects every layer of the population (Galea et al., 2005; Macintyre, Ellaway, & Cummins, 2002).

The health of the environment and of our cities needs to be part of an integrated, multidisciplinary approach which incorporates socioeconomic and territorial policies. Environmental sciences should also widen their areas of application to encompass town planning, architecture, social psychology, epidemiology, and public health.

The "Healthy Cities" project is an initiative launched by the World Health Organization, in line with the basic principles of the Ottawa Charter for Health, as an experimental tool for achieving the objectives of Health for All (World Health Organization, Regional Office



**Healthy Cities, Fig. 1** Il Network Città Sane dell'Organizzazione Mondiale della Sanità. L'esempio di Milano. Presentazione al convegno Salute e sviluppo sostenibile nel Comune di Milano Palazzo Turati, Milano (Source: Donisetti, 2008)

for Europe, 1997, 2003, 2004, 2008; World Health Organization, 1986, 1991).

The project was initially set up in 11 European cities with the aim of encouraging innovation and change in local health policies. At the present time, there are more than 1,200 cities throughout 30 European countries taking part in the project, all of which have pledged to:

- Promote and put in place, in their cities, intersectoral actions and initiatives aimed at protecting public health
- Establish health programs
- Build on and make the fullest use of previous good practices in their cities in the area of health promotion

The principles on which the "Healthy Cities" Movement is based are inspired by equity, health promotion*, community participation, intersectoral actions, and sustainability (World Health Organization, Regional Office for Europe, 1992). The movement also strives to make health determinant theories more accessible to policy-makers and executive bodies.

An understanding of the factors which determine ▶ health and illness, therefore, is vital for gaining the awareness that improving certain features of cities has a real impact on the health and ▶ well-being of their inhabitants.

Although the urban context is determined by social and physical environments, these are in turn shaped by a range of factors and influenced by a variety of players on different levels (Donisetti, 2008) (Fig. 1).

## Cross-References

▶ Environment and Health
▶ Health
▶ Health Geography
▶ Healthcare Services
▶ Healthy Communities
▶ Physical and Social Environment
▶ Quality of Life
▶ Urban Living Conditions
▶ Well-being

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# Healthy Communities

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## Synonyms

Age-friendly communities; Communities and health; Healthy cities; Livable cities

## Definition

(1) A World Health Organization (WHO)-led movement for health promotion that aims to incorporate health, holistically defined, and democratic, participatory principles into local policies and decision-making; and (2) a catchphrase self-applied by certain not-for-profit and public organizations or initiatives whose efforts are aimed at achieving community-wide health benefits.

## Description

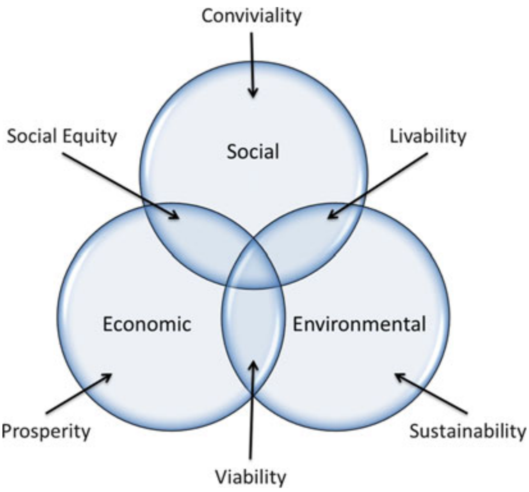
### Healthy Communities Movement

The present-day Healthy Communities Movement, known originally as ► Healthy Cities, began in 1984 with a local initiative in Canada called *Healthy City Toronto* (HCT). As Flynn (1996) documented, HCT brought together various municipal departments – most disconnected conventionally from explicit ▶ health promotion efforts – to work together to improve the conditions for health and well-being in Toronto. In so doing, HCT initiated a public planning process led by the Toronto Board of Health, which included visioning workshops, an environmental scan, development and distribution of issue papers, and public forums. In 1986, the effort resulted in a more ambitious endeavor called *Healthy Toronto 2000*. In support of this endeavor, the City of Toronto established a Healthy City office that challenged community members and leaders to participate in health decision-making, develop projects that reduced inequalities in health status and access to services, and move the city toward healthier public policies.

At the same time, in 1986, the First International Conference on Health Promotion, sponsored by the World Health Organization (WHO), was hosted in Ottawa, Canada. The conference resulted in the *Ottawa Charter for Health Promotion*. The Charter outlined the fundamental prerequisites for health: peace, shelter, education, food, income, a stable ecosystem, sustainable resources, ▶ social justice, and equity; and it defined health "as a resource for everyday life," not simply the absence of disease (World Health Organization [WHO], 1986). Recognition of the social, environmental, and economic ▶ determinants of health served as the foundation of an international movement called Healthy Cities that emerged from the conference with the release of the report *Healthy Cities: Promoting Health in the Urban Context* (Hancock, Duhl, & Duhl, 1986). While the term healthy cities continues to this day to pervade in Europe, North Americans have adopted healthy communities as a term more inclusive of rural, suburban, and urban communities.

The goal of the Healthy Communities Movement (HCM) is to build capacity for health within local communities. The focus, in other words, is not on physical infrastructure or local institutions per se – though environmental conditions and political institutions may be identified as relevant targets for action by local communities engaged in the HCM process – but rather on understanding basic human needs to advance collective health. In aiming to understand these needs, HCM adopts a process-orientation. That is, it advocates for inclusive and participatory forms of governance in visioning and decision-making by encouraging community-wide involvement and broad participation of all sectors of the ▶ community. The former emphasis on inclusive, participatory governance underscores the movement's commitment to empowering communities to take ownership and control over their collective health and well-being. The latter emphasis on participation by all sectors is intended to change the community culture by building health into the decision-making processes of local governments, community organizations, and businesses and to encourage social ▶ entrepreneurship and innovation. Partnership building is thus a key component of a Healthy Community approach. Also central to HCM and what makes it truly unique relative to other health promotion strategies is its effort to secure a commitment by ▶ local government to the process and aims of the movement. Local governments are considered crucial partners in HCM because they are the closest level of formal government to community, they have a strong influence on the quality of community life, and they play a critical role in planning and working toward community health outcomes. Local in scope, HCM is meant to result in the creation of healthy public policy at the local level.

Unlike other health promotion initiatives established to address particular health issues (e.g., obesity, active living, tobacco reduction), HCM focuses on the *whole* community (Hancock, 1993a). In this sense, HCM recognizes there is no universal approach to building a healthy community. Each community is unique, with its own distinctive identity, traits, problems, and resources. In adopting a Healthy Community approach, then, a locality agrees upon a favored



**Healthy Communities, Fig. 1** The interrelationships that Create a Healthy Community (Adapted from Hancock, 1993)

vision for the future, its specific needs, and a plan to improve the overall well-being of its residents. To this end, a healthy community is one that strives continually to be healthier and takes health into account in all its decisions.

### Healthy Communities as Catchphrase

Hancock (1993b) developed a visually descriptive model that, in effect, broke down a healthy community into sets of relationships among social, environmental, and economic spheres of health (see Fig. 1). In so doing, Hancock unpacked important concepts relevant to a healthy community, namely: ▶ livability, conviviality, ▶ equity, prosperity, ▶ sustainability, and viability. A reductionist approach to this model, however, has resulted in the tendency, over time, for well-intentioned agencies and health-related initiatives to advance individual components of the model and claim themselves as champions of healthy communities without necessarily adhering to the core principles of HCM, principles that include a focus on the whole community, a role for local government, and inclusive and participatory governance. To be clear, reductionist approaches are inconsistent with the tenets of HCM, something Hancock made very clear. Nevertheless, "healthy communities" continues to pervade as a common catchphrase adopted by (mostly public and not-for-profit) agencies to position themselves as positive contributors to community health and well-being. In some cases, hybrid movements have even emerged that fuse healthy communities with other movements (e.g., active, healthy communities, which derives from active living and healthy communities). All told, one should not confuse these initiatives with the Healthy Communities Movement, for the ubiquitous usage of "healthy communities" as a catchphrase poses a threat to its foundational principles and overall meaning.

## Cross-References

- ▶ Community
- ▶ Entrepreneurship
- ▶ Equity
- ▶ Fraser Basin Council Sustainability Reporting
- ▶ Health Inequities
- ▶ Health Promotion
- ▶ Healthy Cities
- ▶ Livability Theory
- ▶ Local Government
- ▶ Social Justice
- ▶ Socioeconomic Determinants of Health
- ▶ Sustainability
- ▶ Sustainable Communities Movement

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## Healthy Environment

▶ Healthy Cities
▶ Social Health

## Healthy Intimacy

▶ Dating Couples' Sexual Desire Discrepancies

## Healthy Life Expectancy

▶ Healthy Life Expectancy at Birth
▶ Quality-Adjusted Life Expectancy

## Healthy Life Expectancy at Birth

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### Synonyms

Disability-free life expectancy; Health expectancy; Healthy life expectancy

### Definition

Healthy life expectancy refers to the average number of years a newborn can expect to live in a stage of good health, generally defined in terms of being free from disability.

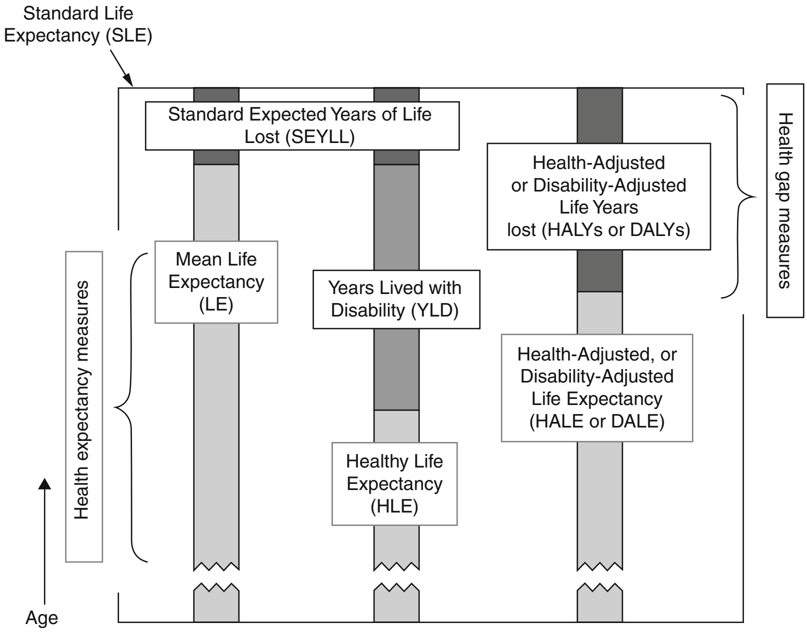
### Description

Healthy life expectancy forms one of a set of related measures of population health. These all begin with life expectancy at birth (syn: average life span; longevity), which refers to the average number of years a live newborn infant can be expected to live. Naturally this is a hypothetical estimate, as we do not know how long infants born today will actually live, so the assumption is made for all such indicators that current age-specific ▶ mortality rates (q.v.) continue to apply. Because mortality rates are generally declining, this likely offers a conservative estimate. Life expectancy figures are widely available for whole countries and for the two sexes in United Nations publications (See References), but data may also be available for smaller geographic areas and can also be presented for subpopulations, such as by ethnic group or socioeconomic level.

As a health indicator, life expectancy has both desirable characteristics and shortcomings. The simplicity of counting years lived is attractive; the data are readily available and almost complete because births and deaths are formally recorded by law in most countries. Average life expectancy also gives more weight to deaths occurring at young ages, a desirable trait that reflects the universal value that each child should have the right to live until old age. However, counting years lived gives no indication of what the ideal life expectancy should be, so it does not tell us how well a country is doing compared to some overall goal. To address this, an arbitrary standard life expectancy may be defined, based on an extrapolation of data from existing countries. From this, one can measure health gaps, or years lost, rather than health expectancies: how far does current life expectancy fall short of the standard expectancy? This produces the idea of heath gap measures, shown in Fig. 1.

Life expectancy also tells us nothing about the healthiness of those who survive: increasing longevity might, for example, bring with it an increase in chronic health problems. Nor does life expectancy reflect the impact of disabling conditions such as ▶ mental illness that do not kill. Disabling conditions can be incorporated in three possible ways: one can equate them to perfect health (which is effectively the assumption in life expectancy); or they can be equated to death, which is the approach used in healthy life expectancies (see center column in Fig. 1);

**Healthy Life Expectancy at Birth, Fig. 1** The relationships among alternative measures of life expectancy at birth



or else life expectancy can be adjusted in a graded manner to arrive at an intermediate value.

Healthy life expectancy represents the simplest way to incorporate an indication of imperfect health. It sets an arbitrary threshold for defining "healthy" and counts the average years lived in this state. The gap between life expectancy and healthy life expectancy represents years lived with disability; these are excluded from healthy life expectancy, which seems unsatisfactory. Hence the third approach, of health (or disability)-adjusted life expectancy (qq.v.). Here levels of health (or disability) are measured in the population using one of many disability scales that are commonly included in national surveys. The next step is to create a set of utility weights that translate a year lived with any defined level of disability into the equivalent of a shorter amount of time lived in good health. Thus, a year lived with a recurring depression might be considered equivalent to (or a person would be willing to exchange it for), say, 8 months lived in good health. These values are applied to translate prevalence data for each defined state of health in the population into time equivalents. These are summed to create a health-adjusted life expectancy value that lies intermediate between healthy life expectancy and life expectancy (see right column in Fig. 1).

## Cross-References

- ▶ Quality-Adjusted Life Expectancy
- ▶ Quality Adjusted Life Years (QALY)

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### Life expectancy data by country

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United Nations data: http://www.worldlifeexpectancy.com/ (accessed September 2011).

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# Healthy Lifestyle

▶ Wellness

# Healthy Pathways Child Report Scales

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## Definition

The Healthy Pathways Child Report Scales are reliable and valid youth-report measures of 17 dimensions of children's health, illness, and well-being. They are appropriate for use with children as young as 8 years of age.

## Description

The 17 Healthy Pathways Child Report Scales assess children's comfort (physical comfort, emotional comfort, negative stress reactions), energy (physical activity, balanced nutrition, vitality), ▶ resilience (peer connectedness, ▶ family connectedness, teacher connectedness, active coping), risk avoidance (aggression/▶ bullying, peer hostility/bully victim), ▶ subjective well-being (▶ life satisfaction, ▶ self-worth, ▶ body image), and achievement (academic performance, school engagement) (Bevans, Riley, & Forrest, 2010). The Scales are largely based on revisions to the Child Health and Illness Profile (CHIP) measurement system (Riley et al., 2004; Starfield et al., 1995), which is comprised of psychometrically robust child, adolescent, and parent editions. One significant limitation of the CHIP system is uncertainty regarding the edition (child or adolescent) that is most appropriate for use during the childhood-to-adolescence transition (10–12 years), a critical period during which there are significant changes in youths' health priorities, social influences, and health-relevant behaviors. A revision to the CHIP was needed to ensure greater sensitivity to the unique health issues that emerge during this critical transitional period. Four novel scales were added to those originally measured by the CHIP, each of which is especially relevant for young adolescents: negative stress reactions (distress experienced involuntarily when presented with a social problem), body image (assessment of one's physical self), peer hostility/bully victim (being bullied by peers), and teacher connectedness (perceptions that teachers care about you as a person and about your learning). The Healthy Pathways Child Report Scales were developed using modern psychometric procedures. Each scale was constructed to assess a single health, illness, or well-being outcome. Scale unidimensionality permits the use of each scale in isolation of the others and their eventual integration into item banks and computerized adaptive tests (Hambleton, Swaminathan, & Rogers, 1991; Hays, Morales, & Reise, 2000).

The Healthy Pathways Child Report Scales were evaluated using data derived from 2,095 youth in grades 4–6 (aged 8–11 years). Children were recruited from regular education classrooms in 34 rural and suburban community schools. Participants were 49 % boys, 81 % White, 17 % African American, 3 % of another race, and 3 % Hispanic. Approximately 21 % of children were living in ▶ poverty as indicated by United States Census Bureau poverty thresholds and 39 % were living in single parent households. Advanced psychometric methods including both traditional (i.e., classical) and modern (i.e., IRT) procedures were used to develop and evaluate the scales (Ravens-Sieberer et al., 2008; Reeve et al., 2007). All items have 5-point Likert scale response categories scored such that higher levels indicate more positive outcomes. Items were assessed using response frequencies, mean, standard deviation, and skewness. We evaluated the unidimensionality of scales by estimating internal consistency reliability coefficients, evaluating the fit of one-factor confirmatory factor analytic (CFA) models, and assessing for local dependence among items through examination of residual correlations in the CFA models. Once scale unidimensionality was confirmed, Rasch-Masters partial credit models were fit to the data. Model and item fit were determined through inspection of infit and outfit statistics and post-hoc estimated empirical item discrimination parameters. Item difficulty parameters were inspected to determine whether the scales provide a comprehensive measure of the underlying latent construct with minimal gaps and redundancies. Tests of uniform ► differential item functioning (DIF) were conducted to identify systematic errors due to group bias as a function of gender, grade level, mode of survey administration (paper/pencil vs. computer-based), and state of residence (Maryland vs. West Virginia). Once scale composition was established based on results of the psychometric analyses, scale scores were calculated by averaging constituent items such that all scale scores ranged from 1 to 5. ► Construct validity was evaluated by testing for expected gender and grade level differences in children's health and disparities among children with and without a special healthcare need, asthma, and attention deficit hyperactivity disorder (Langer et al., 2008; Riley et al., 2006).

► Missing data rates for all items were 2 % or smaller. As is typical for child health status instruments administered in the general population (Ravens-Sieberer et al., 2008; Riley, Chan, Prasad, & Poole, 2007), many items were negatively skewed. However, all response categories were endorsed for every item. One-factor CFA models fit the data well for 15 of the 17 scales [Root Mean Error of Approximation (RMSEA) $\leq$ 0.10 and Comparative Fit Indices (CFI) $\geq$0.90], indicating that each of these scales measures a single health, illness, or well-being dimension. Originally, the one-factor CFA was a poor fit for the peer connectedness scale (CFI = 0.88, RMSEA = 0.12), but the scale was found to be sufficiently unidimensional after removal of a single item ("Thinking about the past 4 weeks, have you done things with other girls and boys?"). In addition, the balanced nutrition scale was a poor fit for the one-factor CFA model (CFI = 0.57, RMSEA = 0.18) and despite attempts to remove items, scale unidimensionality was not achieved. Consistent with CFA results, all scales except balanced nutrition ($\alpha$ = 0.56) had adequate internal consistency reliability ($\alpha$ = 0.72–0.86). Two items from the emotional comfort scale were found to be locally dependent (residual correlation of 0.47): "In the past 4 weeks, how often did you feel really worried?" and "Thinking about the past 4 weeks, have you felt under pressure?" Fit of the one-factor CFA model for emotional comfort was significantly improved through the removal of the "pressure" item (CFI changed from 0.90 to 0.94; RMSEA from 0.10 to 0.07). All other item pairs within scales were found to be locally independent (residual correlations >0.20).

All scales (except for balanced nutrition, which failed to meet the unidimensionality assumption) were fit to the Rasch-Masters partial credit model. The degree to which children reported "talking to a friend" as a means of coping with a social or school-related problem failed to adequately discriminate among children with varying levels of active coping capacities (INFIT = 1.23; OUTFIT = 1.31; $a = 0.62$). The frequency with which children "kept remembering what happened" in response to a stressful event was unpredictable among children at both high and low levels of negative stress reactions (INFIT = 1.19; OUTFIT = 1.24; $a = 0.69$). These items were removed from their respective scales. Item difficulty parameters indicated that all scales covered a broad range of the measured construct (average coverage was 8.6 logits). Ceiling effects greater than 10 % of the sample were observed for 5 scales: aggression/bullying (51 %), peer hostility/bully victim (29 %), self-worth (18 %), life satisfaction (16 %), and body image (12 %). Minimal floor effects (<1 % of the sample) and redundancy in item difficulty were observed for all scales. Differential item functioning by gender was observed for a single item ("How often do you feel really strong?") such that among youth with comparable levels of vitality, males were more likely than females to indicate that they had a high degree of body strength. Because two additional vitality items were slightly easier for girls compared to boys ("How often do you feel really healthy?" and "How is your health?"), the DIF did not change the total vitality score level due to cancelation across items with DIF in opposing directions. No significant DIF was observed by grade level, mode of survey administration, or geographic location.

Construct validity was demonstrated through confirmation of expected group differences in Scale scores. Children with special healthcare needs reported poorer physical comfort, vitality, life satisfaction, and peer interactions (poorer peer connectedness and higher rates of being bullied by peers) (Power, 2006; Ravens-Sieberer et al., 2008). As expected, children with ADHD experienced a multitude of negative outcomes including poor physical and emotional comfort, stress reactions, peer and teacher connectedness, academic performance, and higher rates of victimization by bullies (Barkley, 2006; Riley et al., 2006). Consistent with prior research, children with asthma experienced poorer physical comfort (Birkhart, Svavarsdottir, Rayens, Oakley, & Orlygsdottir, 2009; Forrest, Starfield, Riley, & Kang, 1997).

## Cross-References

▶ Healthy Pathways Parent Report Scales

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# Healthy Pathways Parent Report Scales

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## Definition

The Healthy Pathways Parent Report Scales are reliable and valid parent-report measures of 12 dimensions of children's health, illness, and well-being.

## Description

The 12 Healthy Pathways Parent Report Scales assess children's comfort (physical comfort, emotional comfort), energy (physical activity, balanced nutrition, vitality), ▶ resilience (▶ family connectedness, neighborhood cohesion), risk avoidance (aggression/▶ bullying), ▶ subjective well-being (▶ life satisfaction, ▶ self-worth, ▶ body image), and achievement (academic performance) (Bevans, Riley, & Forrest, 2012). The Scales were developed in tandem with the Healthy Pathways Child Report Scales to encourage the integration of child and parent perspectives on child health. The Scales are largely composed of items derived from the Child Health and Illness Profile (CHIP) Parent Report Form. Revisions to the CHIP reflect advances in the conceptualization of child health (Bevans, Riley, & Forrest, 2010), particularly as it pertains to youth in transition from childhood to adolescence. Three novel scales were added to those originally measured by the CHIP, each of which reflects young adolescents' changing health priorities (aggression/bullying, body image) and the expanding ecologies that influence their health (neighborhood cohesion). The Healthy Pathways Parent Report Scales were developed using modern psychometric procedures. Each scale was constructed to assess a single health, illness, or well-being outcome. Scale unidimensionality permits the use of each scale in isolation of the others and their eventual integration into item banks and computerized adaptive tests (Hambleton, Swaminathan, & Rogers, 1991; Hays, Morales, & Reise, 2000).

The Healthy Pathways Parent Report Scales were evaluated using data collected from 1,527 parents of youth in grades 4–6 (aged 8–11 years). The children of participating parents were 49 % boys, 81 % White, 17 % African American, 3 % of another race, and 3 % Hispanic. Approximately 21 % of families were living in poverty as indicated by United States Census Bureau poverty thresholds and 39 % were living in single-parent households. To evaluate concordance between parent and child report, parents completed the Healthy Pathways Parent Report Scales and children completed the Healthy Pathways Child Report Scales. There are 11 scales with parallel parent- and child-report versions. Advanced psychometric methods including both traditional (i.e., classical) and modern (i.e., IRT) procedures were used to develop and evaluate the scales (Hambleton et al., 1991; Hays et al., 2000; Langer et al., 2008). All items have five-point ▶ Likert scale response categories scored such that higher levels indicate more positive outcomes. Items were assessed using response frequencies, mean, standard deviation, and skewness. We evaluated the unidimensionality of scales by estimating internal consistency reliability coefficients, evaluating the fit of one-factor confirmatory factor analytic (CFA) models, and assessing for local dependence among items through examination of residual correlations in the CFA models. Once scale unidimensionality was confirmed, Rasch-Masters partial credit models were fit to the data. Model and item fit were determined through inspection of infit and outfit statistics and post-hoc estimated empirical item discrimination parameters. Item difficulty parameters were inspected to determine whether the scales provide a comprehensive measure of the underlying latent construct with minimal gaps and redundancies. Tests of uniform ▶ differential item functioning (DIF) were conducted to identify systematic errors due to group bias as a function of child gender, grade level, and state of residence (Maryland vs. West Virginia). Once scale composition was established based on results of the psychometric analyses, scale scores were calculated by averaging constituent items such that all scale scores ranged from 1 to 5. Construct validity was evaluated by testing for expected gender and grade level differences in children's health and disparities among children with and without a special healthcare need, asthma, and attention deficit hyperactivity disorder. The reports of parents and children were compared for the 11 common scales using intra-class correlation coefficients (ICCs).

▶ Missing data rates for all items were 2 % or smaller. As is typical for child health status instruments administered in the general population (Ravens-Sieberer et al., 2006), many items were negatively skewed. However, all response categories were endorsed for every item. One-factor CFA models fit the data well for 11 of the 12 scales [Root Mean Error of Approximation (RMSEA) $\leq$ 0.10 and Comparative Fit Indices (CFI) $\geq$ 0.90], indicating that each of these scales measures a single health, illness, or well-being dimension. A one-factor CFA model was a poor fit for the balanced nutrition items (CFI = 0.74, RMSEA = 0.17), and despite removing items, scale unidimensionality was not achieved. Consistent with CFA results, all scales except balanced nutrition ($\alpha = 0.61$) had adequate internal consistency reliability ($\alpha = 0.70 - 0.94$).

Two items from the physical comfort scale were found to be locally dependent (residual correlation of .32): "In the past 4 weeks, how often did your child have trouble falling or staying asleep?" and "In the past 4 weeks, how often did your child wake up feeling tired?" Despite this, we retained both items given the health and clinical importance of adequate sleep and the dearth of knowledge about sleep-related issues during adolescence (Cohen, 1988), and because the one-factor model fit was not significantly improved through the removal of either item. Residual correlations were < 0.20 for all other item pairs within scales indicating that all remaining items met the local independence assumption. All scales (except for balanced nutrition, which failed to meet the unidimensionality assumption) were fit to the Rasch-Masters partial credit model. Two items had unsatisfactory fit statistics. Parents' reports of "did exercises to strengthen or tone his/her muscles" failed to adequately discriminate among children who engaged in varying levels of physical activity (INFIT = 1.73; OUTFIT = 0.71; $a$ = 0.19). In addition, parents' reports of "schoolwork performance" were also unpredictable based on children's overall level of parent-reported academic performance (INFIT = 0.58; OUTFIT = 0.56; $a$ = 1.45). Both items were removed from their respective scales, but they remain in the child report version where they work well. Item difficulty parameters indicated that all scales covered a broad range of the measured construct (average coverage was 7.1 logits). Ceiling effects greater than 10 % of the sample were observed for 5 scales: aggression/bullying (73 %), self-worth (20 %), emotional comfort (13 %), life satisfaction (13 %), body image (12 %), and academic performance (11 %). Minimal floor effects (<1 % of the sample) and redundancy in item difficulty were observed for all scales. No significant DIF was observed by child gender, grade level, or geographic location.

Construct validity was demonstrated through confirmation of expected group differences in scale scores. Parents of older children reported poorer physical comfort, academic performance, and family connectedness than parents of younger children. Parents rated outcomes of youth with functional limitations and emotional/behavioral concerns as worse on almost all outcomes, except family connectedness. Similarly, children with physician-identified ADHD had a range of poor outcomes, whereas children with asthma had poorer outcomes in only physical comfort and vitality. Parent–child agreement on common scales was weak to moderate, ranging from 0.11 to 0.35. With the exception of physical activity, parents tended to report better outcomes than their children and the effect sizes for these differences were moderate to large for 4 scales (physical comfort, emotional comfort, aggression/bullying, and family connectedness).

## Cross-References

▶ Healthy Pathways Child Report Scales

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# Healthy People 2010

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## Definition

Healthy People 2010 is a comprehensive public health planning program introduced in the USA in January 2000. It was designed to achieve the two overarching goals of increasing quality and years of healthy life for all Americans and eliminating health disparities (US Department of Health and Human Services [DHHS], 2000).

## Description

Since its inception in 1979, the Healthy People program has been adjusted to accomplish ▶ health promotion and disease prevention objectives for the US population (DHHS, 2000). Healthy People 2010, under the direction of the DHHS, is an outgrowth of the three previous Healthy People initiatives. It comprises 467 target objectives organized into 28 focus areas and 10 leading health indicator (LHI) measures. Several initiatives are implemented to help achieve Healthy People 2010 objectives (DHHS, 2000): (1) *HealthierUS* through four pillars of "physical fitness," "nutrition," "prevention," and "make healthy choices"; (2) *Steps to a HealthierUS* through evidence-based community programs and intervention; (3) *Secretary's Top Priorities* (Secretary Mike Leavitt's *500-Day Plan*, *Priority Activities*, and *250-Day Update*) through prevention priority; (4) *Guide to Clinical Preventive Services* through recommendations by experts in primary care and prevention; and (5) *Guide to Community Preventive Services* through systematic reviews of scientific literature by review teams. All these initiatives join forces with Healthy People 2010 to facilitate health practices and lifestyles for individuals of all ages in the USA.

## Summary Progress Toward the Healthy People 2010 Objectives

The DHHS is responsible for monitoring and achieving Healthy People objectives. A Midcourse Review on Healthy People 2010 was conducted to assess progress toward the two overarching goals as well as targets for the objectives (DHHS, 2006). The 2005 Midcourse Review provided an opportunity for the Healthy People Steering Committee and the Assistant Secretary for Health to update and make target adjustments to objectives based on tracking data collected prior to the midcourse review. Objectives without baseline data source were called "developmental" objectives and were excluded from the midcourse review. Overall, 281 of 467 objectives (60 %) with tracking data were assessed, with 29 (10 %) meeting or exceeding the target, 138 (49 %) moving toward the target, 70 (6 %) having no change from the baseline, 75 (20 %) moving away from the target, and 40 (14 %) showing mixed progress. Within the 28 focus areas, more than 51 % of the objectives with tracking data in 16 areas met or moved toward their targets, with occupational safety and health (focus area 20) having the most number of objectives meeting or moving toward their targets (89 %), followed by immunization and infectious diseases (focus area 14, 88 %), and tobacco use (focus area 28, 83 %). Meanwhile population-based objectives were also assessed for specific populations. In general, more than 51 % of the population-based objectives met or moved toward the target: race and ethnicity (all ethnic groups except Native Hawaiian or other Pacific Islander), gender (female, 65 %; male, 66 %), ▶ education (less than high school, 58 %; at least some college, 65 %), income (poor, 60 %; near poor, 54 %; middle/high, 60 %), location (urban, 57 %; rural, 60 %), and ▶ disability status (persons with disabilities, 65 %; persons without disabilities, 62 %).

## Goals: Life Expectancies and Healthy Life Expectancies and Health Disparities

▶ Life expectancy is calculated by applying age-specific death rates for a given year to the average number of years individuals born in a given year live (DHHS, 2006). Between 1999 and 2000 and 2001 and 2002, life expectancy at birth increased by 1.2 %, while life expectancy at age 65 increased by 5.1 %, mainly due to reductions in total ▶ mortality (Pamuk, Wagener, & Molla, 2004; Sondik, Huang, Klein, & Satcher, 2010). In general individuals age 65 or above, women, and the white population had higher life expectancies than the total population, men, and the black population, respectively (DHHS, 2006). ▶ Healthy life expectancy, a tool to track the years and ▶ quality of life (QoL), uses the average health status and death rates to produce age-specific estimates of expected years of healthy life (DHHS, 2006). There are three measures of healthy life expectancy: expected years in good or better health, expected years free of activity limitations, and expected years free of selected chronic diseases. Between 1999 and 2000 and 2001 and 2002, the first two measures increased by 0.1 year, while the third measure decreased by 1.2 years (DHHS, 2006). Women and the white population in general had increased healthy life expectancies (both at birth and at age 65) compared to men and the black population, respectively. Overall, both life expectancies and healthy life expectancies showed progress, but disparities among subgroups increased rather than decreased (DHHS, 2006).

## Leading Health Indicator (LHI) Measures

Ten leading LHI measures from Healthy People 2010 address the primary modifiable health risk factors for morbidity and mortality: physical activity (PA), overweight and obesity, tobacco use, substance abuse, responsible sexual behavior, mental health, injury and ▶ violence, environmental quality, immunization, and access to ▶ health care (DHHS, 2000). A set of LHI measures in terms of both changes in values and in disparities has been evaluated (Harris, Gordon-Larsen, Chantala, & Udry, 2006; Sondik et al., 2010). Half the LHIs had made progress, especially in reducing tobacco use for adults and adolescents and exposure of children to environmental tobacco smoke. However, obesity in adults aged 20 years or older increased by 45.6 % and overweight in children aged 6–12 years increased by 58.7 % (Sondik et al.). Longitudinal trends from adolescence to young adulthood demonstrated that inactivity, obesity, health-care access, and substance use worsened with age and that the Native American and non-Hispanic black groups were at higher risk than the white and Asian populations on most health indicators (Harris et al., 2006). Generally, ▶ health risk behaviors increased and access to health care decreased across ethnic groups over time, suggesting disparities in major health indicators persist (DHHS, 2006; Harris et al., 2006; Sondik et al., 2010).

## Top Leading Health Indicator (LHI): Physical Activity and Fitness

Physical activity (PA) and fitness (focus area 22) is among the top ten LHI measures and has an overall goal of improving health, fitness, and QoL through daily PA. It was recommended that adolescents and adults should engage in moderate PA for at least 30 min per day and 5 or more days per week. There are 15 objectives for this focus area, with 10 of them being measured based on available data. All five objectives for adults moved toward their targets, achieving 6–17 % of the targeted changes: lower rate for no ▶ leisure-time PA (15 %), increase rates for regular moderate or vigorous PA (6 %), vigorous PA (14 %), muscular strength and endurance (17 %), and flexibility (8 %) exercises. Only two of five objectives for students in grades 9–12 moved toward their targets: PA in physical education (PE) class (8 %) and reducing television viewing to 2 or fewer hours per school day (28 %). Objectives regarding moderate PA (−25 %), vigorous PA (−10 %), and participation in daily PE in schools (−5 %) moved away from their targets. Disparities among subgroups in this area had similar changes over time. For most objectives, the best results were for males, the white non-Hispanic population, individuals with some college education, urban dwellers, and individuals without disabilities (DHHS, 2006).

Numerous studies indicate that individuals are insufficiently active and tend to adopt a sedentary lifestyle. Physical inactivity and sedentary behaviors are considered as co-occurring behaviors, and both are linked with adverse health outcomes including overweight and obesity (Tremblay, Colley, Saunders, Healy, & Owen, 2010). The worldwide prevalence of population-weighted physical inactivity is 17.4 %, and is higher among individuals in more developed countries and women than those in less developed countries and men, respectively (Dumith, Hallal, Reis, & Kohl, 2011). Meanwhile sedentary behavior is associated with unhealthy lifestyles, including unhealthy dietary intakes across the lifespan (Pearson & Biddle, 2011). There are longitudinal and secular decreases in moderate to vigorous PA and increases in sedentary behaviors including screen-based seated media through adolescence (Nelson, Neumark-Sztainer, Hannan, Sirard, & Story, 2006). Additionally, PA in adolescence predicts PA in adulthood among both males and females, and physical fitness in adolescent males predicts PA during adulthood (Huotari, Nupponen, Mikkelsson, Lasskso, & Kujala, 2011). Recent studies have reported that being involved in group ▶ exercise at higher intensity levels (e.g., step aerobics and strength training) is associated with improved ▶ HRQoL in adults (McGrath, O'Malley, & Hendrix, 2010) and that self-management education and clinical counseling for PA are important to reduce ▶ arthritis ▶ pain and improve QoL in adults with arthritis (Do, Hootman, Helmick, & Brady, 2011). In May 2010, the US National Physical Activity Plan was implemented, with its aim to create a PA culture in the nation (Safeer & Rothenstein, 2011). To better achieve improved health and QoL among individuals, Healthy People 2010 and other initiatives continue to promote PA and fitness and put this focus area as a top priority.

## Summary

To summarize Healthy People 2010, life expectancy has continued to increase, and there has been a significant improvement in healthy life expectancy over the past decade. Eliminating health disparities is a public health focus but yet remains a challenge due to diverse demographic criteria within the US population (Pamuk et al., 2004) and insufficient tracking data for specific population subgroups (Sondik et al., 2010). Overall, individuals who are more educated, have higher incomes, live in urban areas, and are without disabilities have the highest proportions of objectives and LHIs that met or moved toward the targets (Sondik et al., 2010). Meanwhile PA and fitness rates for adults have improved somewhat, but PA rates for children have not, and overweight and obesity for both groups show significant increases. The Healthy People 2010 analysis needs to adopt a broader approach to address health disparities through government funding for early childhood intervention and enhanced primary care within ► community health centers (Fiscella, 2008). Additionally, some tracking data are either unavailable or are biased due to exclusion of social and demographic characteristics and institutionalized populations using household-based surveys (DHHS, 2006). No changes in ethnic disparities in LHIs over time are noted after controlling for ► socioeconomic status (SES). As such, sociodemographic variables should be taken into account when interpreting data (Harris et al., 2006).

## The Way Forward: Healthy People 2020

In December 2010, DHHS released nationwide health objectives for the next 10 years in Healthy People 2020 (DHHS, 2011). Healthy People 2020 builds on initiatives pursued over the last few decades and continues to provide a comprehensive and science-based framework for achieving improved health and QoL for all Americans. Four new topic areas were added in Healthy People 2020, including health-related quality of life (HRQoL) and ► well-being. HRQoL is a multidimensional concept that consists of domains related to physical, cognitive, emotional, and ► social functioning. Several measures to assess individual global HRQoL and positive evaluations of one's life should be developed and become a focal point in Healthy People 2020. There is also a need to revisit the contextual model of HRQoL to better understand health risk factors for poor HRQoL and disparities in those outcomes among ethnic minority populations (Ashing-Giwa, 2005).

Given that regular PA improves physical and psychological aspects of HRQoL (McGrath et al., 2010; Shibata, Oka, Nakamura, & Muraoka, 2007), Healthy People 2020 is endeavoring to adopt a multidisciplinary approach to promoting active behavior of individuals regardless of age, sex, race, or disability status. Within the topic area of PA, several new objectives such as (a) PA policies relating to childcare and seated screen-based media and (b) environmental correlates of PA at schools and worksites have been included to help achieve the goal of "improving health, fitness, and quality of life through daily physical activity" among individuals.

## Cross-References

► Arthritis
► Demographics
► Developing Countries
► Disability
► Education
► Emotional Well-Being
► Exercise
► Health Care
► Health Disparities
► Health Promotion
► Health Risk
► Health-Related Quality of Life
► Healthy Life Expectancy
► Leisure Time
► Life Expectancy
► Mortality
► Obesity, an Overview
► Occupational Health
► Physical Activity

- ▶ Physical Well-Being
- ▶ Quality of Life
- ▶ Sexual Behavior(s)
- ▶ Socioeconomic Status (SES)
- ▶ Substance Abuse
- ▶ Violence

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## Heart Attack

- ▶ Acute Myocardial Infarction

## Heckit, Sample Selection Models (Type II Tobit)

- ▶ Tobit Models

## Hedonic Adaptation

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### Definition

Hedonic adaptation refers to the process of reverting toward one's previous level of subjective well-being (SWB), following a life event which may initially cause a significant change in SWB.

## Description

Brickman and Campbell (1971) initially developed an *adaptation-level theory of SWB* due to evidence that, within a year or two of experiencing many life events (e.g., getting married, death of spouse), most people appeared to revert to their previous "baseline" level of SWB. The idea was borrowed from research in psychophysics by Helson (1964). Helson showed that, after initially experiencing a period of shock and pain, people fairly rapidly adapt (or "habituate") to physical changes like plunging a hand in very cold water or putting up with high noise levels. The brain adapts and subjects change their reports, so that they no longer record the water as being as cold as before or the noise levels as high. Brickman and Campbell hypothesized that, in a somewhat similar fashion, people *habituate* to major life events so that gains or losses of life satisfaction or happiness dissipate.

In the quarter century following Brickman and Campbell's initial work, a great deal of evidence accumulated which appeared to support adaptation (or adaptation-level) theory. Brickman, Coates, and Janoff-Bulman (1978) showed that people who experience even very dramatic life events substantially adapt to their new circumstances. They obtained evidence from a sample of lottery winners and a sample of people who had become paraplegics. The lottery winners completely adapted to their new circumstances. The paraplegics partially adapted but when the study concluded, still had significantly lowered SWB.

Perhaps the strongest support for adaptation theory has come from the work of Richard A. Easterlin (1974). The *Easterlin Paradox* is based on finding that SWB does not increase when gross domestic product (GDP) and incomes rise. When individuals get a big pay rise or pay cut, their satisfaction levels initially change, but they soon revert to average. Easterlin offered an additional explanation for reversion to average or baseline levels. As well as habituation, he suggested that *social comparisons* are involved. For example, people who gain an increase in their standard of living may initially feel more satisfied with life. But if they then compare themselves with the neighboring Jones's and observe that the Jones's too have become better off, their gain in satisfaction disappears.

The Easterlin Paradox has been repeatedly challenged, most recently by Stevenson and Wolfers (2008). However, critics have not been able to refute Easterlin on a critical point. They have not been able to show that changes in income or standard of living produce long-term (as opposed to transient) changes in SWB.

Social scientists have a tendency to give new names to revised versions of (essentially) the same theory. By the late 1990s, adaptation theory had morphed into *set-point theory*. Set-point theory was partly based on accepting the evidence that the hedonic effects of most life events are transient, but it also emphasized the importance of stable personality traits and other genetic factors in producing stable levels of SWB in adulthood. As explained elsewhere in this volume, set-point theory relied heavily on twin studies which showed that individual differences in SWB appear to be 40–50 % due to genetic effects (Lykken & Tellegen, 1996).

In the last 20 years or so, new evidence has come to light which shows that people do not *completely* adapt to all life events. . .they always *partly* adapt, but they do not always regain their previous baseline or set-point level of SWB. One event – death of one's child – has long been known to be so tragic that most parents never return to their previous baseline (Wortman & Silver, 1987). That event could perhaps be dismissed as an exception which proved the rule. But another much more common event to which most people do not completely adapt is repeated or long-term unemployment. This appears to have a long-term "scarring" effect on SWB (Oswald, 1997; Clark, Diener, Georgellis, & Lucas, 2008). Getting married is also an event which appears to permanently change some people's levels of SWB, although the evidence is not easy to interpret. At first sight, it seems that, on average, SWB is unchanged a year or two after marriage. But this average may be misleading. One plausible interpretation is that some people have permanently lowered levels of SWB, and others have permanently raised levels, which produces a misleading average of "no change" (Lucas, Clark, Georgellis, & Diener, 2003). It has been suggested that people who marry relatively neurotic partners record long-term losses in SWB, while those who marry emotionally stable partners record long-term gains (Headey, Muffels, & Wagner, 2010; see also Robins, Caspi, & Moffitt, 2000).

Easterlin, whose earlier work provided key support for adaptation theory, has reviewed work in the family life and health domains and concluded that, in these domains, unlike the economic domain, complete adaptation to life events often does not occur (although partial adaptation does) (Easterlin, 2005). He notes that longitudinal studies in the health field indicate that people who suffer chronic health problems, including severe arthritis and type 2 diabetes, record long-term declines in SWB (Easterlin, 2005; Mehnert, Kraus, Nadler, & Boyd, 1990).

The state of play at the present time is that adaptation theory and set-point theory are being seriously questioned (Diener, Lucas, & Scollon, 2006; Headey et al., 2010). Longitudinal studies are showing that the SWB levels of substantial minorities of the population are subject to long-term change (Fujita & Diener, 2005; Headey et al., 2010). They also show that, while partial adaptation to life events is pervasive, complete hedonic adaptation does *not* always occur.

## Cross-References

- ▶ Adaptation-Level Theory
- ▶ Set-Point Theory

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# Hedonic Level

▶ Subjective Well-Being (SWB)

## Hedonic Level of Affect

► Affective Component of Happiness

## Hedonic Price Model

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### Synonyms

Nonmarketable goods, regression models

### Definition

Hedonic pricing treats a marketed good, usually a house, as a sum of individual goods (characteristics or attributes) that cannot be sold separately in the market. The main objective of a hedonic pricing model is to estimate the contribution of such characteristics or attributes to the price of house. This is why they have become a core strategy to estimate the implicit prices of nonmarketable goods.

### Description

In the two last decades, topics related with quality of life (QoL) have been paid increasing attention. It is well known that the physical, economic, and social ambiance could influence both the economic behavior of individuals and the collective well-being. Of course, the way that the above-mentioned factors influence the individual behavior is not the same for each individual (or group), and subjectivity and individual perceptions should be considered in the analysis (see Royuela, Lambiri, & Biagi, 2008, for details).

Myers (1988) cites four different approaches to the analysis of the QoL:

(a) The livability-comparisons approach, based on additive combinations of objective indicators relative to the QoL (local income, education level, housing prices, health care, parks, climate, arts and entertainment, etc.) to evaluate the life conditions in different urban areas.
(b) The community trends-based approach, which relies on an objective indicator profile of changing community character and subjective citizen assessment of each separate factor that influences the QoL.
(c) The personal well-being approach, based on regression models estimating weighted contribution to self-evaluations of different life domains to overall life satisfaction.
(d) The market/residence approach, which uses regression models to estimate a weighted contribution of objective amenities to wage or housing price differentials between places.

The livability-comparisons approach has been criticized on several grounds (the definition of quality of life based on the ad hoc use of available data, the use of subjective weighted indicators, and the lack of theory to guide measurements and arbitrary weights are some of them). The personal well-being approach often fails to meet community purposes. The community trends-based approach is a recommended approach for planning purposes. Finally, the market/residence approach uses nonmarketable public goods but has the advantage that citizen preferences (and hence weights) can be measured from market behavior; and this is an extremely important advantage. The studies based on this approach are structured as hedonic equations, with wage levels or housing prices predicted as a function of different attributes of places.

More specifically, hedonic pricing treats a marketed good, usually a house, as a sum of individual goods (characteristics or attributes) that cannot be sold separately in the market (Nelson, 1978). Therefore, the hedonic price could be defined as the implicit price of the attributes of differentiated products. Focusing on QoL, as stated in Lambiri, Biagi, and Royuela (2007), the value of this attribute is "capitalized" in the locally traded good (housing) and wages. The implicit prices of local attributes can be calculated and then used either separately or inside a QoL index.

The term "hedonic" has Greek roots. The price is called "hedonic" by the "pleasure" (in economic terms, utility) that the buyer obtains for the quality of the attributes of a specific good. The first economist to introduce this type of methodology to measure QoL in cities is Rosen (1974). The aim of Rosen was to compare the QoL in some US cities, starting with data on wages. Rosen calculated the contribution on the level of wages of different factors such as cost of living, human capital (vector of personal productivity variables such as education and work experience), and other positive or negative city attributes relevant in influencing workers' city choice. Currently, economists use data on housing prices as an explanatory marketable variable and a wide variety of both models and indicators.

Therefore, the main objective of a hedonic pricing model (HPM) is to estimate the contribution of such characteristics or attributes to the price of house. This is why HPM have become a core strategy to estimate the implicit prices of nonmarket goods. Under standard assumptions of perfect competition, information and mobility, and the maximization of well-behaved preferences, the hedonic strategy allows inferring the implicit prices of nonmarket goods such as air quality, noise pollution, water quality, power lines, leaking underground storage tanks, superfund sites, and nuclear power plants, etc. As, in general, the price of a house is related to the characteristics of the house and property itself, the characteristics of the neighborhood and community, and the environmental characteristics; if non-environmental factors are controlled for, then any remaining differences in price can be attributed to differences in the attribute under study. For example, if all characteristics of houses and neighborhoods throughout an area were the same, except for the level of noise pollution, then houses with lower levels of noise would be more expensive. This higher price reflects the willingness to pay for lower levels of noise of people who purchase houses in the area.

Economists have developed a number of procedures that provide reasonable estimates on the monetary value of nonmarket goods, but HPM is undoubtedly the most used strategy.

The economic theory does not assign specific rules for the formulation of the functional relation between the house prices and the individual characteristics or attributes that contributes to such prices. As a consequence, many functional forms have been used in the literature: the linear, the log-linear, the semilog-linear, the reciprocal, and the log-inverse form (Triplett, 2006). The choice of the most suitable functional form is usually facilitated by the criterion of goodness of fit.

In the sequel, we focus on the log-linear form, the most popular in the literature, and on the question of estimating the willingness to pay for an environmental (nonmarketable) amenity (*EA*). Of course this specification is valid for estimating the willingness to pay for other variables. This specification corresponds to the equation:

$$y_i = \alpha + \lambda EA_i + \mathbf{z}_\mathbf{i}^\mathrm{T}\delta + \varepsilon_\mathbf{i} \qquad (1)$$

where $y_i$ represents the log of the price of the $i$th house, $EA_\mathrm{i}$ indicates the level of the environmental amenity considered (sometimes an ordinal variable is used to take into account nonlinearities), $z_i^T = (z_{1i}, z_{21}, \ldots, z_{ki})^T$ includes the $k$ individual and areal characteristics of the $i$th dwelling, $\alpha$ is the intercept of the equation, and $\varepsilon_\mathrm{i}$ is a random disturbance that is assumed to be distributed $\mathrm{N}\left(0, \sigma_\varepsilon^2\right)$. The impact of $EA_\mathrm{i}$ on the housing price, or semi-elasticity, is given by $\mathrm{d}y_\mathrm{i}/\mathrm{d}EA_\mathrm{i} = \lambda$ and estimates the willingness to pay for one more (or less) unity of the environmental amenity under study. The estimation of the coefficients is usually made through the application of an Ordinary Least Squares (OLS) multiple regression technique.

In fact, the HPM consists of two steps. In the first step, Eq. 1 is estimated and the implicit prices of the characteristics (marginal willingness to pay) are calculated from the regression. The second step estimates the parameters of the demand function of the characteristic of interest. Most research studies are limited to the first step of the HPM. The reason is that the second stage requires having data from multiple markets, separated spatially or temporally.

In the last decade, the literature has paid much attention to the existing spatial dependencies in the price of houses. According to the first law of geography, everything is related to everything else, but near things are more related than distant things (Tobler, 1970). And, in the case of housing prices, this spatial dependence is not an intuition, but it has been extensively empirically checked in the literature. Because of that spatial dependence of the price of houses, the assumption of an independent and identical distribution of the error term in Eq. (1) is not satisfied. As a result, as has been shown in the literature (Anselin, 1988), the omission of spatial effects can result in estimators being inefficient and, what is worse, inconsistent, regardless of the estimation method. This is the reason why currently HPM based on housing prices are spatial house price models (SHPM).

The most general SHPM is the spatial Durbin model (SDM). In fact, the usual spatial models – spatial autoregressive models (SAR) and spatial error models (SEM) – are particular cases of SDM.

The SDM is given by the following matrix equation:

$$\mathbf{y} = \rho\mathbf{W}\mathbf{y} + \alpha\mathbf{i_n} + \mathbf{X}\beta + \mathbf{W}\mathbf{X}\gamma + \varepsilon, \varepsilon \sim N\left(\mathbf{0}, \sigma_\varepsilon^2\mathbf{I_n}\right) \tag{2}$$

where $\mathbf{y}$ is a $(n\text{x}1)$ vector including the observations of the logarithms of the house prices; $\mathbf{X}$ is a $(n\text{x}k)$ matrix comprising the information about the environmental amenity we are interested in as well as the observations of the individual and areal characteristics associated to each dwelling and other spatial variables such as noise, surface, condition, and mean mortgage in the neighborhood, etc., $\mathbf{I_n}$ is a $(n\text{x}1)$ unit vector for the intercept (removed from $\mathbf{X}$ to avoid problems of exact multicollinearity in the estimation); and $\mathbf{W}$ is the $(n\text{x}n)$ spatial weights matrix. Obviously, $\mathbf{Wy}$ and $\mathbf{WX}$ capture the spatial lags corresponding to the dependent and the variables included in $\mathbf{X}$, respectively. On the other hand, $\rho$ is a spatial parameter that measures the existing spatial dependence of the dependent variable, $\alpha$ is the intercept parameter, $\boldsymbol{\sigma}^2$ is the variance of the disturbance under homoscedasticity, and $\boldsymbol{\beta}$ and $\boldsymbol{\gamma}$ are $(k\text{x}1)$ vectors of parameters associated to the independent variables and their lags, respectively. While in the SDM model we impose the restrictions $\rho = 0, \boldsymbol{\gamma} = \mathbf{0}$, the nonspatial hedonic model (1) is obtained as a particular case.

The specifications that include the spatial lag of the endogenous variable, $\mathbf{Wy}$, as a regressor, produce an endogeneity bias because the spatial lagged variable is correlated to $\boldsymbol{\varepsilon}$. However, under the assumption of multivariate normal distribution of the disturbances, the estimation of the parameters of the model can be carried out by the ML procedure (see LeSage & Pace, 2009).

Finally, one usual problem that arises when dealing with environmental variables (closely related to the QoL) in a HPM or SHPM is that some of them are measured only in a scarce number of monitoring stations and it is needed to have the value of such variables in the sites where house prices have been observed. This matching problem is usually solved using interpolative procedures (kriging is the most popular). However, when using this procedure for matching, OLS estimation method is not consistent because the interpolation causes a potential errors-in-variables problem.

In the SHPM case, if the spatially lagged dependent variable is not the only endogenous regressor, as the environmental variable is also endogenous, the instrumental variable (IV) method is recommended to carry out estimations. Montero and Fernández-Avilés (2009) is interesting literature for kriging procedures related to environmental variables. Anselin and Lozano-Gracia (2008) is highly recommended for details on both the errors-in-variables problem and the use of IV estimation method in the above context.

## Cross-References

- ▶ Air Quality
- ▶ Homoscedasticity
- ▶ Human Capital
- ▶ Multiple Regression
- ▶ Public Good(s)
- ▶ Quality of Life

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# Hedonic Treadmill

- ▶ Consumption Externalities
- ▶ Easterlin Paradox

# Hedonicity

- ▶ Pleasure(s)

# Hedonism

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## Definition

### Different Kinds of Hedonistic Theories

The term “hedonism” comes from the Greek term “hedone,” which means pleasure, and in everyday speech, we tend to think of a hedonist as someone who is not just open to pleasant experiences but who also pursues pleasure, at times with disregard to all else. Hedonism need not be conceived of as a way of life, however, but can also be regarded as a kind of theory.

What kind of theories are hedonistic theories then, e.g., what are they about? There are several possible answers to this question, i.e., several different “hedonisms.” One form of hedonism claims that only pleasure or pain motivates us ultimately, that we always act in pursuit of what we think will give us the greatest balance of pleasure over pain. This form of hedonism is often called *motivational hedonism* or *psychological hedonism*, and the claim it makes is purely empirical. Hedonism can also be conceived of as a conceptual theory about the nature (or definition) of happiness. On the *hedonistic theory of happiness*, happiness is best regarded as a favorable balance of pleasure over displeasure rather than as, e.g., life satisfaction.

Hedonistic theories are most often regarded as evaluative theories, however, i.e., as claims about what has value (and why). The central claim of *evaluative hedonism* is that nothing but pleasure has positive final value (is good as an end rather than as a means) and that nothing but pain (unpleasant feeling or experience) is bad as an end. All other values are merely instrumental (good as a means), e.g., things like knowledge, friendship, love, beauty, or virtue only have value because they tend to increase our pleasure and/or diminish our pain. There are two kinds of evaluative hedonism, depending on what kind of value one attributes to pleasure. On the first view, pleasure has absolute value in the sense that the more pleasure (and the less pain) the world contains, the better the world is. On second view, pleasure has final value for the person who feels the pleasure; it has so-called prudential value (or value-for). It is only the latter view – i.e., *prudential hedonism* – that can, strictly speaking, be regarded as a theory of well-being (see below).

It is also possible to regard hedonism as an ethical theory, i.e., as a normative theory about what we ought to do. This usage is suggested by the second part of Jeremy Bentham's (1789) famous statement (the first part is psychological hedonism): "Nature has placed mankind under the governance of two sovereign masters, *pain* and *pleasure*. It is for them alone to point out what we ought to do." But pleasure and pain cannot by themselves "point out what we ought to do," since there are different ways in which they can be taken into account in our ethical reasoning. For example, an ethical egoist who endorses hedonism thinks it is rational to act in a way that maximizes his own pleasure and minimizes his own pain (this view is sometimes called *ethical hedonism*), whereas a utilitarian thinks that morality requires of us that we maximize the pleasure and minimize the suffering in the world as a whole. However, it can be argued that the hedonistic components of these views are really evaluative (but cf. Tännsjö 2007). According to ethical egoism, what we really have a reason to maximize is our own well-being, and if a hedonistic theory of well-being is endorsed, we get the idea that the rational thing to do is to maximize our own pleasure and minimize our own pain. And according to utilitarianism, what we really ought to do is to make the world as good a place as possible (e.g., by maximizing the well-being in the world), and if this normative view is combined with evaluative hedonism, we get the idea that the moral thing to do is to maximize the pleasure and minimize the pain in the universe as a whole. In short, there really is no such thing as ethical hedonism, but evaluative hedonism plays an important role in certain normative theories, as in the case of hedonistic egoism or hedonistic utilitarianism (which was Bentham's own moral view).

## Description

In this entry, I restrict my attention to the second (and more common) kind of evaluative hedonism (see "definitions"), namely, prudential hedonism. Prudential hedonism is a theory of well-being, or the good life, and it might be worth saying a few words on what this means.

### Hedonism as a Theory of Well-Being

The question of well-being (the good life or quality of life) is one of the classical questions in philosophy. This question has been formulated in somewhat different ways: e.g., "what makes a life good for the person who lives it?" or "what does ultimately make a life worth living?"

In order to make this question more precise, philosophers have formally defined the notion of well-being (the good life) in terms of what has *final value for a person*. There are three important aspects of this formal definition. First, to claim that a certain life is good is to evaluate it in a positive way, and the question of the good life is thus a purely evaluative question (cf. above). Second, the type of value that is of relevance in this context is value-for (or prudential value). When we say that someone has a good life, we mean that her life is good *for her*, i.e., the question of the good life is a question about what kind of life that is good for the person who lives it. And third, the relevant prudential values are final rather than instrumental values, i.e., a person's well-being is constituted by those situations (events or states of affairs) which are good for her *as ends* rather than as means. To have a good life is simply to have a lot of positive final value (and little or no negative final value) in one's life.

On the hedonistic theory of well-being, the good life is identical with the pleasant life. To have a good life (or a high degree of well-being) is to feel good. The only thing that has positive final value for a person is pleasant experience, and the only thing that has negative final value for a person is unpleasant experience. In short, the prudential value of a life is a function of how much pleasure and displeasure this life contains. The more pleasure it contains, the better, and the more displeasure it contains, the worse. The greater the balance is of pleasure over pain, the higher the degree of well-being.

This view was rather common in ancient Greece. The early hedonists of the Cyrenaic School (in the fourth century BC) tended to focus on sensory pleasures (enjoyable physical sensations), but Epicurus' more sophisticated hedonism (formulated in the early third century BC) would soon render it obsolete. In Epicurus' view, a pleasant life is not primarily a life full of sensory pleasures but a life characterized by tranquility and freedom from fear (ataraxia) and freedom from pain, and it is best attained by way of moderation. Other famous hedonists in the history of Western philosophy are the early utilitarians Jeremy Bentham and John Stuart Mill.

### Hedonism as a Formal Theory of Well-Being

The view just presented might be called *substantive hedonism*. A theory of well-being is substantive if it makes substantive claims about what has final value for us, and this is exactly what the hedonist does when he attributes final prudential value to all pleasant mental states. An account of prudential value may also be formal, however. Instead of making substantive claims about what is good and bad for us, a formal theory specifies some *formal criterion* that helps us. A great deal *determine* what is good and bad for a person. It is worth noting that hedonism has also been conceived of as a formal theory, e.g., by various economists (but cf. also Sumner 1996). In this case, prudential value is not attributed to the pleasant experiences themselves, but to the different objects in which the subject takes pleasure.

## What Is Pleasure?

Modern hedonists typically use "pleasure" in a broad sense (broader than ordinary language), and they take it to include all pleasant feeling or experience, like sensations, emotions, and moods. Examples of sensations that are typically pleasant are the taste caused by drinking a good wine, the bodily feelings caused by getting a massage or taking a hot bath, or the sensations one gets from drinking something cold when thirsty. Examples of emotions that are normally pleasant are gladness, infatuation, pride, and hope, and examples of pleasant moods are joy, harmony, and elation. Pain is also understood broadly and is taken to include all unpleasant feeling or experience, i.e., unpleasant sensations like pains, aches, discomforts, and itches; unpleasant emotions like grief, fear, worry, despair, guilt, shame, and hatred; and unpleasant mood states like depression, anxiety, and boredom.

Given this broad variety of pleasures and displeasures, it might be asked if all these experiences have anything in common, in virtue of which can properly be labeled as pleasant or unpleasant. What makes a pleasant experience pleasant? The most simple conception of pleasure is the idea that there is a certain kind of felt sensory quality (a distinct hedonic tone) which is shared by all pleasant experiences (and which makes them pleasant) and that there is another kind of hedonic quality which makes all unpleasant experiences unpleasant (cf. Brandt, 1979, Broad, 1930, Brülde, 1998, Griffin, 1986, Nozick, 1989, Parfit, 1984, Sumner, 1996). The major objection to this monistic quality theory is that the two hedonic qualities postulated by the theory do not exist. If we consider how much different pleasures differ from each other, we will realize that they do not have any felt quality (hedonic or non-hedonic) in common. As Parfit (1984) puts it: "Compare the pleasures of satisfying an intense thirst or lust, listening to music, solving an intellectual problem, reading a tragedy, and knowing that one's child is happy. These various experiences do not contain any distinctive common quality" (p. 493).

So what are the alternatives to this theory? One possibility is the pluralistic quality theory.

This account assumes that an experience is pleasant in virtue of being pervaded by some kind of pleasant hedonic tone, but it also assumes that there are several different kinds of "pleasant hedonic tone." However, most philosophers have endorsed the relational theory (or attitudinal model). On this view, an experience is pleasant if and only if (and because) the following conditions are met: (1) The experiencing subject has some kind of pro-attitude toward the experience, e.g., he desires it or likes it; (2) the experience is desired or liked *when experienced*; and (3) it is desired in a certain way, namely, "in and for itself" or "as a goal," e.g., because it has certain felt (sensory) qualities. There is a wide spread agreement that this is the conception of pleasantness and unpleasantness that the hedonist should endorse, i.e., the conception which makes hedonism most plausible.

### Pleasantness as Hedonic Level

To arrive at a sufficiently precise formulation of hedonism, we also need to know to what exactly that pleasantness or unpleasantness are (and should be) attributed. Is hedonism most plausible if pleasantness is primarily attributed to overall states of feeling (total mental states at certain times), or should it rather be attributed to experiences in the plural, in the sense in which a person can have several experiences going on at the same time? (Brülde, 1998) On reflection, the first view is more plausible, assuming that pleasantness is something that *might* be directly attributed to whole experiential lives and that it makes good sense to talk about how good or bad a person feels on the whole. And I think it does. A hedonistic theory that incorporates this holistic view equates well-being with *hedonic level*: The better a person feels (on the whole) at a certain time, the better her life is at this time. A hedonist that endorses this view is Tännsjö (2007). The hedonism that he defends is "a view according to which pleasurable states are individuated as concrete and total experiential situations of a sentient being at a time. Typical of such situations is that, when we are in them, we are at a certain hedonic level. They feel in a certain way for the creature in them."

This holistic move may well explain why hedonism is sometimes equated with the *happiness theory of well-being*. According to this theory, a person's well-being is dependent on one thing only, namely, how happy that person is. Nothing but happiness has final value for a person. But is it plausible to label this view hedonism? This depends on what conception of happiness is incorporated into the theory. In my view, a happiness theory of well-being can only be conceived of as hedonistic if it conceives of happiness as some kind of affective state, if it equates being happy with *feeling* happy, e.g., with being on a high hedonic level. Happiness is sometimes regarded as life satisfaction, however, i.e., as a positive attitude toward one's life as a whole. A happiness theory of the good life that incorporates this conception of happiness is clearly *not* a version of hedonism, and the same thing holds a for a happiness theory of well-being that incorporates the hybrid view, where happiness is regarded as a complex mental state, in part cognitive and in part affective (cf. Brülde, 2007).

## Objections to Hedonism

The hedonistic theory of well-being is controversial and has been criticized in many different ways. What makes the theory controversial is not the idea that all pleasant experiences have final value for us, even though some have argued that it is not really good for us to take pleasure in, e.g., other people's misery. The controversial claim is rather that *nothing else* besides feeling pleasure or displeasure has final value for a person, e.g., that things like love, friendship, or meaningful work has merely instrumental value for us.

The arguments that have been given against this claim are most often not directed at hedonism in particular but against all "mental state theories," i.e., all theories that accept the so-called *experience requirement*, the idea that a person's level of well-being is dependent solely on what his experiences are like, on how his life appears to him from the inside. The most common type of objection to the experience requirement is the argument from deception. All mental state theories (including hedonism) claim that a person's well-being can be assessed entirely "from the inside," with no reference at all to the actual conditions of her life. This implies that a totally deluded person, whose happiness is based on misperceptions of the conditions of her life, can have a perfectly good life. This is quite counterintuitive, however, and the pure hedonistic theory must therefore be rejected. Different versions of this argument have been offered by, e.g., Griffin (1986), Rachels (1986), Sumner (1996), Brülde (1998), and Kagan (1998), but the most famous argument of this kind is probably Nozick's (1974, 1989) experience machine (cf. also Brülde, 2007).

Nozick asks us to imagine a machine that could give us any experience that we desired. Being plugged into the machine, one would all the time be floating in a tank, with electrodes attached to one's brain, and the machine would stimulate the brain in any way preprogrammed. While in the tank, one would not know that one is there; one would think that it is all actually happening. Nozick now asks us (rhetorically) whether we would plug into this machine for life. For most of us, the answer is "no," and the reason for this is (of course) that "something matters to us in addition to experience" (Nozick, 1974, p. 44) or alternatively, that we "care about things in addition to how our lives feel to us from the inside" (Nozick, 1989, p. 104).

> "We care about more than just how things feel to us from the inside; there is more to life than feeling happy. We care about what is actually the case. We want certain situations we value, prize, and think important to actually hold and be so. [. . .] We want to be importantly connected to reality, not to live in a delusion. [. . .] What we want and value is an actual connection with reality. [. . .] To focus on external reality, with your beliefs, evaluations, and emotions, is valuable *in itself*, not just as a means to more pleasure or happiness. [. . .] We do not, of course, simply want contact with reality; we want contact of certain kinds: exploring reality and responding, altering it and creating new actuality ourselves. [. . .] No doubt, too, we want a connection to actuality that we also share with other people. One of the distressing things about the experience machine, as described, is that you are alone in your particular illusion." (Nozick, 1989, pp. 106–107)

Some arguments from deception do not just purport to show that there is more to well-being than happiness however; they also aim to establish an even stronger claim, namely, that a person's well-being can be directly (and not just causally) affected by things he does not know anything about, e.g., that one can be directly ("intrinsically") harmed by what one does not know. For example, Nagel (1970) argues that it is positively bad for a person to be betrayed, deceived, or ridiculed behind his back.

There are other arguments besides these, some of which might be labeled "happy slave arguments." Here, there is no reference whatsoever to false or delusional *beliefs*. The problem is rather connected to the *preferences* or *evaluative standards* that make the happy slave or subjugated housewife content with their respective lots (cf. Brülde, 2007; for more arguments for and against hedonism, see Brülde, 1998).

### Responses to These Objections

How are we to respond to these objections? We might of course reject hedonism (and all other mental state theories) in favor of some alternative theory. There are two major alternatives to hedonism. The first is *the desire theory*, according to which a person has a good life if and only if she actually has the kind of life that she herself wants to have. This is not a mental state theory, since whether a desire is actually satisfied depends in part on the state of the world. The second is *objectivist pluralism*. On this view, there are several objective values (besides pleasure or happiness) that make a life good for a person, independently of what she herself thinks of the matter, and to have a high degree of well-being is to have these values present to a high degree. Classical examples of such alleged objective values are knowledge, contact with reality, friendship, love, freedom, to function well, personal development, and meaningful work.

For those who are still convinced that hedonism is the best theory of well-being, the question remains which form of hedonism is most plausible. For example, is some modified form of hedonism to be preferred to the pure form presented above? John Stuart Mill (1863) thought so, when he rejected Bentham's "quantitative approach" in favor of his own "qualitative approach." In his view, the value of a pleasant mental state does not just depend on its degree of pleasantness but also on what other properties it has, e.g., whether it is a “higher” or “lower” pleasure. There are many possible forms of modified hedonism besides Mill’s view, however, e.g., the idea that a pleasure is more valuable if the belief on which it is based is true rather than false (cf. Brülde, 1998).

## Cross-References

- ▶ Consequentialism
- ▶ Emotional Well-Being
- ▶ Ethics
- ▶ Good Life, Theories of
- ▶ Happiness
- ▶ Individual Quality of Life
- ▶ Life Satisfaction, Concept of
- ▶ Pain
- ▶ Personal Well-Being
- ▶ Pleasure(s)
- ▶ Quality of Life (QOL)
- ▶ Subjective Well-Being (SWB)
- ▶ Utilitarianism
- ▶ Value Theories
- ▶ Well-Being, Philosophical Theories of

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## Hegemony of Value Judgment

▶ Public Opinion

## Helpful Behaviors

▶ Prosocial Behavior

## Helping

▶ Prosocial Behavior

## Hemodialysis and Quality of Life

▶ Hemodialysis Patients, Quality of Life

## Hemodialysis Patients, Quality of Life

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## Synonyms

Dialysis; Hemodialysis and quality of life

## Definition

The systematic use of the term ▶ quality of life (QoL) began after the Second World War in the context of assessing the effect of the acquisition of material goods on people's lives. Nowadays, its use is widespread in several areas, especially in sociology, politics, ecology, advertising, and marketing. In the medical sciences, QoL is a term used to describe an auto-perception of functioning (ability to perform daily living activities) and well-being (emotional and mental ▶ well-being and satisfaction with social activities) (Santos, 2011).

End-stage renal disease (ESRD) is characterized as an irreversible loss of more than 90 % of kidney function and, as the expression suggests, means impending death. Fortunately, hemodialysis (HD) has modified the natural course of ESRD. The expanded offer of HD began in the 60s, and today the survival of more than a million people throughout the world depends on this therapy (Parker, Hakim, Nissenson, & Steinman, 2011). HD consists basically of the diffusion of molecules in solution across a synthetic semipermeable membrane in an attempt to mimic the normal excretory function of the kidneys (Himmelfarb & Ikizler, 2010). Thus, HD works as a long-term renal-replacement therapy for ESRD patients.

## Description

Fifty years after the widespread availability of HD, despite significant technical and medical advances, the main characteristics of dialysis therapy remains unchanged, such as the need for severe dietary restrictions, life dependence upon 4-h HD sessions three times a week, and still incomplete replacement of kidney function. The consequences for patients undergoing dialysis are lost time during regular HD sessions, influencing employment, leisure, and relationships; dependence on a machine, causing psychological distress; and several clinical problems over time due to the incomplete renal replacement. As a result, patients undergoing HD are 20 times more likely to die than the general population, and no significant improvement in survival in recent years has been observed (Parker et al., 2011). The stagnated survival rates along with therapy stressors have made QoL among HD patients into a main outcome parameter. HD patients' QoL has being widely estimated by the most used general (▶ SF-36 Health Survey, Quality of Life Questionnaire) and disease-specific (Kidney Disease Questionnaire) instruments. Mainly with the SF-36 Health Survey, research shows that HD patients have very poor QoL. ESRD treated by HD affects QoL more intensely than other chronic diseases, like heart failure, diabetes, chronic lung disease, arthritis, and cancer (Mittal, Ahern, MacKintosh, & Fitzpatrick, 2001). Additionally, the QoL level has been validated as a powerful predictor of morbidity and death among HD patients (Mapes et al., 2003).

Several factors influence QoL among patients undergoing HD. For instance, culture plays a central role as a determinant of QoL perception. A contrasting pattern is found in which HD patients from Western countries mainly present lower physical aspects of QoL, while Japanese patients experience greater declines in mental aspects (Fukuhara et al., 2003). As expected, sociodemographic factors like age, race, and social status are well recognized.Younger patients, probably due to their expectations of employment and social relations, tend to have lower QoL on dialysis than older patients (Abdel-Kader et al., 2009). In our experience, patients from low-income areas present worse QoL than those from more developed regions (Santos, 2010). In the United States, African-Americans perceive better QoL than non-African-American patients (Unruh et al., 2004). In addition to these general determinants, several clinical variables specifically associated to ESRD, like anemia and nutritional condition, can strongly influence QoL (Santos, 2011).

When compared to other modalities of ESRD treatment, it is difficult to conclude about differences between HD and the other modality of dialysis, peritoneal dialysis, which is not as widespread as HD and uses the patient's own peritoneum as the semipermeable membrane.

Nevertheless, there is no doubt that kidney transplantation offers better QoL than HD and peritoneal dialysis (Ogutmen et al., 2006).

Unfortunately, there is a lack of interventional studies focusing on QoL among HD patients. Consequently, there is a paucity of validated actions aiming to improve QoL in this context. In fact, no improvement of QoL among HD patients has been found in the past 10 years (Gabbay, Meyer, Griffith, Richardson, & Miskulin, 2010). Whether HD patients will achieve better QoL levels under emerging modalities such as nocturnal and short daily dialysis remains unknown.

## Cross-References

- ▶ Income Influence on Satisfaction/Happiness
- ▶ SF-36 Health Survey
- ▶ Well-Being, Philosophical Theories of

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# Hepatitis Quality of Life Questionnaire, Bengali Version

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## Synonyms

HQLQ

## Definition

The term ▶ quality of life (QoL) is used to evaluate an individual's total well-being, including all emotional, social, mental, and physical aspects of a person's life. In the context of medicine and ▶ health care, it is frequently referred to as the health-related quality of life (HRQoL). This is a multidimensional concept that measures how an individual's well-being may be impacted over time by a disease, ▶ disability, or disorder. The Hepatitis Quality of Life Questionnaire (HQLQ) was originally a 69-item viral hepatitis-specific questionnaire developed by Bayliss et al. (1998) to evaluate the QoL of patients with chronic hepatitis C virus infection and chronic liver disease. This instrument is an expansion of the generic 36-item Short-Form Health Survey (▶ SF-36) questionnaire which includes additional QoL scales specific to hepatitis patients. It was subsequently shortened to a 56-item instrument with 14 scales (QualityMetric Inc, 1998).

## Description

Although concerted efforts have been made to reach a consensus about the conceptualization of HRQoL, differences persist with regard to its operation and measurement (Schipper, Clinch, & Powell, 1990). According to the World Health Organization, health is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease" (World Health Organization, 1948). Patrick and Erickson (1993) broadened this concept to express the influence of diseases, injury, or treatment on the duration of survival as modified by impairments, functional status, perceptions, and social opportunities. A good definition of QoL must therefore address the issue of what makes an individual's life worth living and purposeful. The QoL in relation to health is an abstract and complex concept embracing multiple dimensions, ranging from somatic sensation; physical, psychological, and ▶ emotional well-being; and cognitive and functional competency to the establishment of social relationships. It represents the individual's response to these dimensions in daily living and the extent to which personal ▶ satisfaction with life can be achieved, as a result of health impairment.

QoL measurements on a patient following an intervention procedure is essential for assessing the benefits of health-care programs which are often aimed at improving the functional status, well-being, and general health of patients, especially those with long-term ailments. The instruments for measuring health perceptions are varied, and one promising instrument which is both easy to implement and acceptable to patients is the SF-36 health survey questionnaire constructed for use in the Medical Outcomes Study (Ware & Sherbourne, 1992).

The SF-36 questionnaire is a standardized, multipurpose, self-administered form of 36 questions. It comprises eight multi-item dimensions of a broad array of health concepts (viz., physical functioning, role limitations due to physical health, role limitations due to emotional problems, social functioning, bodily ▶ pain, mental health, vitality, and general health perceptions) as well as psychometrically based physical and mental health summary measures and a preference-based health utility index. It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group.

Hepatitis B virus (HBV) infection is one of the most prevalent chronic infective diseases worldwide (Liang, 2009), and 75 % of such infections occur in Asia, Middle East, and Africa (Andre, 2000). In Bangladesh, it is responsible for 10–35 % of acute viral hepatitis, 36 % of acute liver failure, 33–41 % of chronic hepatitis, and 47 % of hepatocellular carcinoma (HCC). While majority of the infected may remain asymptomatic, a significant number develop chronic HBV infection (CHB), cirrhosis, or HCC (Lok, Leeuwen, Thomas, & Sherlock, 1985). These patients usually present with nonspecific complaints such as lethargy and malaise, muscle and joint pain, diarrhea, as well as psychiatric disturbances like depression, ▶ anxiety, and guilt (Lok et al., 1985), and thus their QoL may be compromised.

Various instruments have been used to measure the QoL of HBV patients. Lok et al. (1985)

**Hepatitis Quality of Life Questionnaire, Bengali Version, Table 1** Definition of health concepts in HQLQ

| Scale | Number of items | Definition | Item number |
|---|---|---|---|
| SF-36 scales | | | |
| Physical functioning | 10 | Extent to which health limits activities | 3a–3j |
| Role physical | 4 | Extent to which physical problem limits the amount of time spent at work or the quality of work accomplished | 4a–4d |
| Bodily pain | 2 | Extent of bodily pain and its interference with normal work during the past 4 weeks | 7, 8 |
| General health | 5 | Overall evaluation of health in general | 1,11a–11d |
| Vitality | 4 | Vibrancy during the past month | 9a,e,g,i |
| Social functioning | 2 | Extent to which health interferes or limits normal social activities with family and friends | 6, 10 |
| Role emotional | 3 | Extent to which emotional problem limits the amount of time spent at work or the quality of work accomplished | 5a–5c |
| Mental health | 5 | General mood and psychological well-being during the past month | 9b,c,d,f,h |
| Change in health | 1 | Transition in health as compared to a year ago | 2 |
| Physical component summary scale | | Overall summary measure of physical health status derived from the eight SF-36 multi-item scales scored using norm-based methods | |
| Mental component summary scale | | Overall summary measure of mental health status derived from the eight SF-36 multi-item scales scored using norm-based methods | |
| Additional generic scales | | | |
| Health distress | 4 | Distress attributable to health | 14a–14d |
| Positive well-being | 4 | Perception of well-being as well as interest in daily activities and life in general | 15a–15d |
| Disease-specific scales | | | |
| Hepatitis-specific limitations | 3 | Extent of limitation in daily activities due to hepatitis | 16a–16c |
| Hepatitis-specific health distress | 4 | Level of health distress due to hepatitis | 17a–17d |

developed a questionnaire to study the psychosocial impact of CHB on British patients. Kunkel et al. (2000) investigated the relationship between depression and CHB and other liver-related diseases using the Beck Depression Inventory-Short Form. The Sickness Impact Profile (Davis et al., 1994), the SF-36 (Ware & Sherbourne, 1992), the Chronic Liver Disease Questionnaire (CLDQ) (Younossi et al., 1999), and the HQLQ (Bayliss et al., 1998) have alternatively been used to evaluate the QoL of patients with chronic hepatitis C virus infection and chronic liver disease.

The HQLQ scales comprise three components: (a) 10 scales (8 multi-item scales and 2 overall summary scales) from the SF-36 instrument measuring the generic health status and the impact of a disease on the QoL; (b) two additional generic scales, namely, health distress to measure the distress attributed to health for people with a chronic disease and positive well-being to complement the mental health scales of the SF-36 instrument; and (c) two additional hepatitis-specific scale, hepatitis-specific limitations and hepatitis-specific health distress, to improve the sensitivity of the HQLQ on HBV. The definitions of these health concepts are summarized in Table 1.

A raw score was computed for each scale by summating the score of all items in that scale according to the algorithm provided by QualityMetric Inc (1998). This was then transformed to a score of 0–100, with 0 representing the worst health and 100 the best health. The missing data were substituted by the average score of the available items in the scale if more than half the items were completed. Otherwise, the scale was regarded as missing for the respondent.

Like most QoL instruments, the HQLQ was developed for settings where English is the primary medium for communication. However, in Bangladesh where HBV is endemic, the main language of communication is Bengali. As such, the QoL of this population remained a mystery since the translated version of QoL instruments was not available in the native language. With permission from QualityMetric, the original 56-item English version of HQLQ was translated into Bengali (Bangladesh) according to a standardized procedure and validated by Chen, Mamun, Tan, Luo, and Tai (2010). Forward translation of the original English version of the questionnaire into Bengali was first performed by a native Bengali speaker fluent in English. This was later back translated into English by a native English speaker who was proficient in Bengali and did not have knowledge of the HQLQ. Reconciliations were made between the two versions, and a pilot test on 10 CHB patients was conducted before the final version was achieved.

To evaluate the scale validity and ▶ reliability of the translated HQLQ instrument, 100 patients (50 treatment naive (Naive) and 50 treated with lamivudine (LAM)) with mean age of 30 (SD 8.6) years and predominantly males (77 %) were recruited at a hepatology outpatient clinic at the Bangabandhu Sheikh Mujib Medical University, Dhaka, between 2007 and 2008. They were confirmed CHB by HBV serology with two specimens of positive HBV surface antigens at least 6 months apart. Written informed consent was obtained from each patient, and the participants self-administered the instrument if they were able to read and understand the questionnaire. Otherwise, a research assistant provided assistance for participants who were illiterate. The instrument was readministered 6 months later to evaluate the responsiveness of the QoL scales to changes in health status.

A range of statistical methods was implemented to evaluate the validity and reliability of the HQLQ scales: item-scale correlation for evaluating the item convergent validity, ▶ Cronbach's alpha for determining internal reliability, two sample t-test for assessing clinical validity of scales between the treated subjects who had "more severe" disease and the untreated, correlation matrix to examine scale validity, and paired t-test for evaluating the responsiveness to changes in health status.

Except for bodily pain (75 %) and social functioning (67 %), all items were completed at baseline, with computable scales ranging between 84 % and 100 % (Table 2). Notable ceiling and floor effects were observed for social functioning, role physical, and role emotional scales at baseline. Except for role physical, bodily pain, and vitality, the median item-scale correlations were all larger than 0.40. There was a high degree of reliability for physical functioning, social functioning, health distress, positive well-being, hepatitis-specific limitations, and hepatitis-specific health distress, all with Cronbach's alpha $> = 0.70$. Nevertheless, reliability was especially low for bodily pain (0.54) and vitality (0.42).

Generally, patients reported lower scores for general health, vitality, role emotional, physical component summary, and mental component summary, as compared with other scales (Table 3). In the validation study by Chen et al. (2010), patients who were treated with LAM when there was a flare up of liver function were deemed to have more severe disease. Consequently, these patients also reported lower baseline QoL scores as compared to those who were treatment naive. The differences in QoL scores as attributed by differences in clinical status of patients were evident for about half of the HQLQ scales (Table 3).

The inter-scale correlations ranged from −0.20 to 0.92 (Table 4). Scales which were conceptually related had higher correlations (e.g., health distress and hepatitis-specific health distress, $r = 0.90$; mental health and mental

**Hepatitis Quality of Life Questionnaire, Bengali Version, Table 2** Summary measures of HQLQ scales at baseline ($n = 100$) (After Chen et al., 2010, Table 1)

| | Physical functioning ($k^a = 10$) | Role physical ($k = 4$) | Bodily pain ($k = 2$) | General health ($k = 5$) | Vitality ($k = 4$) | Social functioning ($k = 2$) | Role emotional ($k = 3$) | Mental health ($k = 5$) |
|---|---|---|---|---|---|---|---|---|
| % complete items[b] | 100.0 | 100.0 | 75.0 | 100.0 | 100.0 | 67.0 | 100.0 | 100.0 |
| % computable scales[c] | 100.0 | 100.0 | 84.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Median convergent item-scale correlation[d] (Range) | 0.67 (0.18–0.86) | 0.39 (0.26–0.73) | 0.37 (0.37–0.37) | 0.48 (0.23–0.63) | 0.26 (0.10–0.32) | 0.88 (0.88–0.88) | 0.60 (0.25–0.63) | 0.54 (0.05–0.67) |
| Reliability[e] | 0.89 | 0.65 | 0.54 | 0.64 | 0.42 | 0.93 | 0.67 | 0.70 |
| Range | 20–100 | 0–100 | 31–100 | 15–92 | 10–80 | 25–100 | 0–100 | 12–80 |
| Skewness | −0.82 | −0.22 | −0.07 | 0.34 | −0.36 | −0.57 | 0.18 | −0.47 |
| % ceiling | 13.0 | 24.0 | 10.0 | 7.0 | 6.0 | 25.0 | 24.0 | 13.0 |
| % floor | 5.0 | 13.0 | 5.0 | 11.0 | 1.0 | 10.0 | 30.0 | 5.0 |

| | Physical component summary[f] | Mental component summary[g] | Health distress[h] ($k = 4$) | Positive well-being[i] ($k = 4$) | Hepatitis-specific limitations[j] ($k = 3$) | Hepatitis-specific health distress[k] ($k = 4$) |
|---|---|---|---|---|---|---|
| % complete items | 84.0 | 84.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| % computable scales | 84.0 | 84.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Median convergent item-scale correlation (Range) | – | – | 0.80 (0.71–0.85) | 0.70 (0.57–0.79) | 0.70 (0.40–0.74) | 0.91 (0.62–0.95) |
| Reliability | – | – | 0.90 | 0.85 | 0.77 | 0.93 |
| Range | 27.0–61.2 | 21.8–51.9 | 0–100 | 0–100 | 13.3–100 | 0–100 |
| Skewness | −0.42 | −0.33 | −0.40 | −0.26 | −0.01 | −0.06 |
| % ceiling | 5.0 | 1.0 | 4.0 | 8.0 | 20.0 | 29.0 |
| % floor | 1.0 | 5.0 | 5.0 | 5.0 | 6.0 | 7.0 |

[a] The number of items in the scale

[b] Percentage of patients completed all items in the scale

[c] Percentage of patients completed at least 50 % of the items in the scale

[d] Correlation between an item and its hypothesized scale, corrected for overlap

[e] Internal consistency by Cronbach's alpha

[f] Overall summary measure of physical health status derived from the eight SF-36 multi-item scales

[g] Overall summary measure of mental health status derived from the eight SF-36 multi-item scales

[h] Consists of items: discouraged by your health problems, felt weighted down by your health problems, health was worry in your life, frustrated by your health

[i] Consists of items: enjoyed the things you do, daily life been full of things interesting to you, felt cheerful and lighthearted, living been a wonderful adventure to you

[j] Consists of items: everyday physical activities, daily work, normal social activities

[k] Consists of items: discouraged because of hepatitis, felt weighted down by your hepatitis, having hepatitis was a worry in your life, frustrated because of having hepatitis

**Hepatitis Quality of Life Questionnaire, Bengali Version, Table 3** Comparison of mean score of HQLQ scales at baseline by treatment (After Chen et al., 2010, Table 3)

| HQLQ scales | Total ($n = 100$) | LAM ($n = 50$) | Naïve ($n = 50$) | $p$-value |
|---|---|---|---|---|
| Physical functioning | 73.8 (22.4) | 64.2 (25.2) | 83.3 (13.9) | <0.001 |
| Role physical | 56.5 (34.6) | 48.5 (35.1) | 64.5 (32.4) | 0.020 |
| Bodily pain | 72.1 (20.2) | 61.0 (17.2) | 79.7 (18.7) | <0.001 |
| General health | 47.8 (20.7) | 41.1 (16.6) | 54.4 (22.3) | 0.001 |
| Vitality | 50.5 (17.9) | 50.7 (14.4) | 50.3 (21.0) | 0.912 |
| Social functioning | 73.8 (27.8) | 72.0 (28.9) | 75.5 (27.0) | 0.532 |
| Role emotional | 46.0 (38.4) | 44.0 (37.8) | 48.0 (39.4) | 0.605 |
| Mental health | 55.2 (20.1) | 56.1 (22.7) | 54.2 (17.4) | 0.650 |
| Physical component summary | 46.1 (9.4) | 39.5 (8.5) | 50.6 (7.1) | <0.001 |
| Mental component summary | 39.4 (9.8) | 40.4 (9.2) | 38.7 (10.2) | 0.423 |
| Health distress | 55.9 (29.4) | 54.2 (35.9) | 57.5 (21.2) | 0.577 |
| Positive well-being | 57.2 (27.8) | 60.3 (28.7) | 54.0 (26.8) | 0.260 |
| Hepatitis-specific limitation | 64.1 (25.9) | 59.9 (29.0) | 68.4 (21.8) | 0.099 |
| Hepatitis-specific health distress | 57.5 (33.6) | 57.0 (37.7) | 58.0 (29.2) | 0.882 |

Note: Figures in parenthesis denote standard deviation

**Hepatitis Quality of Life Questionnaire, Bengali Version, Table 4** Inter-scale correlations at baseline (After Chen et al., 2010, Table 2)

| | PFl | RF | BP | GH | VT | SF | RE | MH | PCS | MCS | HD | PW | HL | HHD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Physical functioning (PF) | 1.00 | | | | | | | | | | | | | |
| Role physical (RP) | 0.75 | 1.00 | | | | | | | | | | | | |
| Bodily pain (BP) | 0.65 | 0.70 | 1.00 | | | | | | | | | | | |
| General health (GH) | 0.71 | 0.53 | 0.42 | 1.00 | | | | | | | | | | |
| Vitality (VT) | 0.39 | 0.41 | 0.04 | 0.65 | 1.00 | | | | | | | | | |
| Social functioning (SF) | 0.58 | 0.47 | 0.55 | 0.50 | 0.21 | 1.00 | | | | | | | | |
| Role emotional (RE) | 0.47 | 0.65 | 0.36 | 0.01 | 0.04 | 0.26 | 1.00 | | | | | | | |
| Mental health (MH) | 0.73 | 0.66 | 0.35 | 0.47 | 0.49 | 0.57 | 0.63 | 1.00 | | | | | | |
| Physical component summary (PCS) | 0.84 | 0.75 | 0.77 | 0.84 | 0.40 | 0.58 | 0.08 | 0.38 | 1.00 | | | | | |
| Mental component summary (MCS) | 0.50 | 0.58 | 0.25 | 0.30 | 0.41 | 0.63 | 0.77 | 0.92 | 0.17 | 1.00 | | | | |
| Health distress (HD) | 0.78 | 0.76 | 0.48 | 0.63 | 0.67 | 0.41 | 0.43 | 0.80 | 0.67 | 0.65 | 1.00 | | | |
| Positive well-being (PW) | 0.15 | −0.12 | −0.20 | 0.30 | 0.21 | 0.45 | −0.14 | 0.15 | 0.01 | 0.13 | 0.14 | 1.00 | | |
| Hepatitis-specific limitations (HL) | 0.78 | 0.61 | 0.34 | 0.68 | 0.54 | 0.64 | 0.28 | 0.78 | 0.62 | 0.59 | 0.74 | 0.41 | 1.00 | |
| Hepatitis-specific health distress (HHD) | 0.80 | 0.78 | 0.41 | 0.73 | 0.71 | 0.49 | 0.39 | 0.82 | 0.69 | 0.63 | 0.90 | 0.08 | 0.78 | 1.00 |

component summary, $r = 0.92$). Conversely, scales which were dissimilar had lower correlations (e.g., role emotional and physical component summary, $r = 0.08$). Positive well-being did not seem to be correlated with any scales except social functioning ($r = 0.45$), suggesting it was measuring a distinctly different concept.

Changes in health status at 6 months from baseline were observed in 52 (20 improve, 32 worse) patients. Those with improved health status tended to report higher scale scores at 6 months, whereas those with worse health status tended to report lower scores at 6 months for all scales except social functioning (Table 5).

**Hepatitis Quality of Life Questionnaire, Bengali Version, Table 5** Comparison of mean score of HQLQ scales at 6 month and baseline according to change in health status (After Chen et al., 2010, Table 4)

| | Better health ($n = 20$) | | | Worse health ($n = 32$) | | |
|---|---|---|---|---|---|---|
| HQLQ scales | 6 month | baseline | *p*-value | 6 month | baseline | *p*-value |
| Physical functioning | 72.5 (17.4) | 57.5 (14.6) | <0.001 | 63.9 (16.4) | 68.4 (29.4) | 0.384 |
| Role physical | 35.0 (23.5) | 25.0 (21.5) | 0.176 | 37.5 (19.1) | 66.4 (30.9) | <0.001 |
| Bodily pain | 69.5 (28.5) | 63.1 (29.0) | 0.013 | 53.3 (13.6) | 65.2 (13.0) | 0.035 |
| General health | 46.5 (10.5) | 31.7 (13.6) | <0.001 | 41.6 (11.6) | 47.4 (16.1) | 0.144 |
| Vitality | 53.5 (12.5) | 36.8 (10.8) | <0.001 | 35.9 (7.8) | 57.7 (12.2) | <0.001 |
| Social functioning | 67.5 (15.9) | 50.0 (21.5) | <0.001 | 82.4 (14.8) | 70.3 (32.7) | 0.006 |
| Role emotional | 33.3 (0.0) | 31.7 (27.5) | 0.789 | 36.5 (43.5) | 43.8 (41.0) | 0.572 |
| Mental health | 49.2 (12.5) | 33.6 (7.5) | <0.001 | 38.4 (16.4) | 57.9 (25.5) | <0.001 |
| Physical component summary | 44.7 (9.0) | 40.0 (10.0) | <0.001 | 40.6 (3.6) | 43.2 (7.7) | 0.268 |
| Mental component summary | 37.4 (4.0) | 31.3 (7.6) | <0.001 | 35.8 (4.9) | 38.1 (10.1) | 0.122 |
| Health distress | 52.5 (28.3) | 28.8 (16.1) | <0.001 | 38.1 (23.3) | 66.7 (31.8) | <0.001 |
| Positive well-being | 60.3 (17.1) | 51.5 (17.3) | 0.004 | 45.0 (26.5) | 57.7 (34.9) | 0.001 |
| Hepatitis-specific limitations | 40.3 (1.5) | 43.0 (8.5) | 0.176 | 54.8 (32.3) | 64.8 (34.1) | 0.105 |
| Hepatitis-specific health distress | 38.5 (34.4) | 22.0 (22.0) | <0.001 | 35.3 (25.7) | 73.1 (38.0) | <0.001 |

## Discussion

While clinical outcomes and serology are of primary interests to clinicians in the treatment of HBV, the QoL following treatment is emerging as important parameters in the evaluation of patients. Studies have shown that these patients suffered from fatigue, pain, and psychiatric disturbances, which may be linked to their functional health status, psychological well-being, and general health functions (Bayliss et al., 1998; Kunkel et al., 2000; Lok et al., 1985).

In a previous study to evaluate the validity and reliability of the Bengali translation of HQLQ, we demonstrated that Bengali patients with HBV generally reported lower scores in general health, vitality, role emotional, physical component summary, and mental component summary (Chen et al., 2010). The low score for mental component summary was consistent with the findings of Lok et al. (1985) which revealed a majority of their patients to be psychologically affected by CHB. Similarly, Kunkel et al. (2000) reported mild to severe depression in 46 % of Korean immigrants with HBV and other liver-related diseases. Foster, Gorlin, and Thomas (1998) too noted a higher prevalence of impaired mental health in CHB patients as compared with the general population.

The notion that fatigue was a common chronic complaint of HBV patients was corroborated by our observation of low score for vitality. A high level of fatigue (64 %) or equivalently a low score for vitality was reported by Kunkel et al. (2000) and Bayliss et al. (1998), respectively. Foster et al. (1998) and Bayliss et al. (1998) also observed a significant reduction in scores for general health scale among patients with CHB and hepatitis C, as compared with the general population.

Although Bayliss et al. (1998) reported ► convergent validity for all scales, our item-scale correlations were sufficiently strong for all scales except role physical, bodily pain, and vitality. This suggests that further investigations are warranted for items exhibiting low item-scale correlations. Further, the inter-scale correlations demonstrated convergent and ► discriminant validity of the HQLQ scales, with similar scales exhibiting high correlation and dissimilar scales having low correlation. As in the studies by Bayliss et al. (1998) and Younossi et al. (1999) evaluating the clinical validity of HQLQ and CLDQ, respectively, the Bengali version of HQLQ also showed that the scores of patients with differing clinical status were well discriminated.

A high degree of reliability was reported for the SF-36 scales involving physical functioning and social functioning, additional generic scales of health distress and positive well-being, as well as hepatitis-specific scales including hepatitis-specific limitations and hepatitis-specific health distress. The Cronbach's alpha was, however, low for vitality and bodily pain as compared with Bayliss et al. (1998) who reported reliability coefficients >0.80 for all scales. Generic concepts of diseases and perceptions of QoL may vary with cultures and languages. Thus, to increase the reliability of the Bengali version of the HQLQ, there may be a need to tailor the concepts of diseases and QoL questions according to different cultural context.

The HQLQ (Bengali) instrument was also found to be responsive to changes in health status over time. Higher QoL scores were noted for improved health status, and correspondingly, lower QoL scores were observed for worse health status. Notable ceiling and floor effects were observed in the SF-36 scales of role physical, social functioning, and role emotional, as in Bayliss et al. (1998). These might have limited such scales in detecting changes in scores over time. Nevertheless, the responsiveness of the other scales not susceptible to such effects seemed accurate and reliable.

The following limitations were noted in this study. First, the size of the pilot study ($n = 10$) might be too small for assessing the patients' understanding of the questionnaire and relevant administrative difficulties. Second, the participants were recruited via convenience sampling in this study, and hence, there might be possible bias in patient selection. Third, the lack of information on relevant clinical markers of HBV severity limits the validation of scales across subgroups of patients. Finally, the absence of an external measure of change in health status might have limited the assessment of responsiveness of scales.

In conclusion, the Bengali HQLQ is generally a valid and reliable instrument for capturing the QoL and disease burden of patients afflicted with HBV in Bangladesh.

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## Cross-References

- ▶ Anxiety
- ▶ Convergent Validity
- ▶ Cronbach's Alpha
- ▶ Disability
- ▶ Discriminant Validity
- ▶ Emotional Well-Being
- ▶ Health Care
- ▶ Health-Related Quality of Life (HRQoL)
- ▶ Pain
- ▶ Physical Functioning (PF)
- ▶ Quality of Life (QoL)
- ▶ Reliability
- ▶ Satisfaction With Life

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# Heraclitus

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## Birth, Education, Work History, and Main Contributions

Heraclitus of Ephesus (c. 540–c. 480 BCE) was born to an aristocratic family and throughout his life maintained deep doubts about (if not disdain for) the capacities and character of those with less fortunate origins. Of the hundred or so remaining fragments of his works, those positing a world constantly undergoing changes while preserving identities are most frequently associated with his philosophy, e.g., "Upon those who step into the same rivers, different and again different waters flow" (McKirahan, 1994, p. 122). He believed that the universe was not made but always existed and formed a coherent unity displaying great diversity. The ultimate material building blocks were fire, water, and earth, which were distinct but periodically transformed into one another. The fundamental principle of order was referred to as the Logos, which is a multipurpose word connoting discourse, word, story, opinion, reason, and cause, to mention a few. As if this variety of usual meanings were not confusing enough, Heraclitus sometimes identified the Logos with justice, fire, strife, war, God, soul, and law. Perhaps because he was so deeply impressed by the diversity of the world around him, he noticed that much of that diversity was constructed (to use a modern term) by observing the world from different perspectives or using different standards of comparison. For any of his contemporaries interested in defining "the" ▶ good life the descriptive and evaluative relativism of some of his fragments would have been deeply disturbing. For example, consider the following:

> The sea is the purest and most polluted water: to fishes drinkable and bringing safety, to humans undrinkable and destructive.
>
> Pigs rejoice in mud more than pure water.
>
> We would call oxen happy when they find bitter vetch to eat.
>
> Physicians who cut and burn complain that they receive no worthy pay, although they do these things.
>
> The road up and the road down are one and the same.
>
> To God all things are beautiful and good and just, but humans have supposed some unjust and others just. (McKirahan, 1994, pp. 121–125)

Thus, safe drinking water is important to fishes and humans, but the same water is different for each species. It may be appropriate to think of rejoicing pigs and happy oxen, but different things produce these pleasant states in these different species. ▶ Pain and those who inflict it upon others are normally regarded as bad, but physicians inflict it upon their patients, believing it to be good and worthy of some valuable payment for services rendered. The gradient of a road may be advantageous or disadvantageous to a traveler depending on the direction of his or her travel, though the gradient is the same for all travelers. Most devastating of all, what appears just or unjust to humans is really uniformly just, beautiful, and good to God. That is to say, everything in the world is really just, beautiful, and good in some objective sense known only to God, although to humans (and presumably all other sentient species according to other fragments), some things appear to be unjust, ugly, and bad. In the presence of such complexity (or confusion), one might suppose that Heraclitus would have been unable and unwilling to provide any recommendations for living "the" good life. In fact, since vague and contradictory premises have unlimited implications, confused philosophical foundations provide fertile soil for practically any desired crop. Thus, besides valuing personal safety, ▶ justice, ▶ happiness, and beauty as suggested above, according to Heraclitus, "Right thinking is the greatest excellence, and wisdom is to speak the truth and act in accordance with nature, while paying attention to it" (McKirahan, 1994, p. 120). The "right thinking" or "wisdom" referred to is practical as well as theoretical. It is revealed in one's assertions and actions, which are guided by careful observation of the natural world followed by behavior that is appropriate to the conditions of that world as well as to one's particular species. The good life is one lived in communities in which people willingly follow customs and obey conventional laws that are consistent with an ideal law sometimes referred to as "the divine law." It is a life relatively free of drunkenness, ▶ anger, and ▶ violence. While there is a place for religion and religious rituals, there is no room for bathing oneself in blood or singing hymns "to the shameful parts [phalli]." Finally, Heraclitus believed that "It is not better for humans to get all that they want" (McKirahan, 1994, p. 128). At a minimum, this last fragment implies that the mere maximization of desire satisfaction is neither necessary nor sufficient for the good life. So, Heraclitus probably would have been unimpressed with Lewin et al.'s (1944) ▶ aspiration theory or Michalos' (1985) ▶ multiple discrepancies theory.

## Cross-References

- ▶ Multiple Discrepancies Theory
- ▶ Quality of Life, Two-Variable Theory
- ▶ Social Indicators

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# Heritage Area

▶ Parks and Quality of Life

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# Herth Hope Index

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## Synonyms

HHI

## Definition

One often-cited definition of hope, especially by nurses, is the definition developed by Dufault and Martocchio (1985). They define hope as "a multidimensional dynamic life force that is characterized by a confident yet uncertain expectation of achieving good, which is realistically possible and personally significant." One scale to measure hope, Herth Hope Index (HHI), is based on this definition of hope (Herth, 1992).

## Description

The HHI is an adaptation of the Herth Hope Scale (Herth, 1991). HHI was developed in 1989 to make a scale that was shorter and specifically designed for use in clinical settings (Herth, 1992). Furthermore, it should clearly reflect the unique dimensions of hope in the clinical populations and reduce the number of items and the complexity of the items (Herth, 1992). HHI contains 12 items, and each item is rated on a 4-point Likert scale that ranges from "strongly disagree (1)" to "strongly agree (4)." A total HHI score that can range from 12 to 48 is calculated, and higher scores indicate higher levels of hope.

Another intention with HHI was to capture the same multidimensionality in hope as the Herth Hope Scale. Six dimensions described by Dufault and Martocchio (1985) were combined into three dimensions, a cognitive – temporal dimension (the perception that a positive, desired outcome is possible); affective – behavioral (a feeling of confidence with initiation of plans to affect the desired outcome); and affiliative – contextual dimension (the recognition of the interdependence and interconnectedness between self and others and between self and spirit).

The HHI was originally developed in English and is translated into different languages, Dutch (Van Gestel-Timmermans, Van Den Bogaard, Brouwers, Herth, & Van Nieuwenhuizen, 2010), Japanese (Chiba, Kawakami, Miyamoto, & Andresen, 2010), Norwegian (Wahl et al., 2004), Portuguese (Sartore & Grossi, 2008), Swedish (Benzein & Berg, 2003), and Taiwanese (Wang, Chang, Shih, Sun, & Jeng, 2006).

The HHI is used to measure hope in different patient groups, cancer (Utne et al., 2008) including palliative patients (Benzein, Norberg, & Saveman, 2001); heart failure, cardiac events, or heart transplant (Rustoen, Howie, Eidsmo, & Moum, 2005); multiple sclerosis (Fraser, Hadjimichael, & Vollmer, 2001); Parkinson's disease (Fowler, 1997); ALS (Vitale & Genge, 2007); long-term mental illness (Chiba et al., 2010); COPD (Alberto & Joyner, 2008); and home care patients (Duggleby et al., 2007). In addition is the scale used to measure hope in homeless people (Herth, 1996), prisoners (Nedderman, Underwood, & Hardy, 2010), family caregivers (Lohne, Miaskowski, & Rustoen, 2012), and in the general population (Rustoen et al., 2003).

## Psychometric Properties

### Validity

*Construct Validity* Construct validity was supported through the factorial isolation of three factors by Herth (1992) in a sample of American patients with acute, chronic, or terminal illnesses. These three factors accounted for 41 % of the total variance in the measure. Subsequent research has found a two-factor solution (Benzein & Berg, 2003; Van Gestel-Timmermans et al., 2010; Wahl et al., 2004), but these two factors identified in the three studies are totally different from each other.

*Criterion-Related Validity* Validity was established by correlating the HHI with the parent Herth Hope Scale ($r = 0.92$), the Existential Well-Being Scale ($r = 0.84$), and the Nowotny Hope Scale ($r = 0.81$) (Herth, 1992). Other studies have confirmed both a good criterion-related validity and divergent validity (Benzein & Berg, 2003; Herth, 1992; Van Gestel-Timmermans et al., 2010; Wahl et al., 2004).

### Reliability

*Internal Consistency* The Cronbach's alpha for the total HHI is varying between 0.81 and 0.97 in different patient groups and the general population (Benzein & Berg, 2003; Herth, 1992; Van Gestel-Timmermans et al., 2010; Wahl et al., 2004).

*Test-Retest Correlations* A 2-week test-retest reliability of 0.91 was found in ill patients (Herth, 1992). In the Dutch sample of patients with mental illness, a test-retest reliability of 0.79 was found (Van Gestel-Timmermans et al., 2010).

### Sensitivity

Hope measured by HHI is found to change due to intervention for older terminally ill cancer patients compared to those in the control group (Duggleby et al., 2007) and in patients with recurrent cancer (Herth, 2000).

## Discussion

The HHI is short and easy to use. It is used in different patient groups in many parts of the world and is not specific to any religion. Even if the HHI shows good psychometric properties regarding reliability, we should pay attention to the validity aspects of the scale. It is a reason to believe that hope is culture specific, and the HHI is made in the USA. When translating a scale into a different language, linguistic, conceptual, and cultural difficulties can occur. Benzein and Berg concluded that the results of their work demand the work of developing an instrument measuring hope, based in the Swedish culture (Benzein & Berg, 2003). Further research is needed about possible culture-specific aspects of the scale.

The construct validity and the three dimensions that HHI is supposed to capture were not supported outside the USA. As the psychometric studies did not find a consistent factor structure for the HHI, it might be an interplay between the various dimensions and that the HHI measures the generalized sphere of hope and not the underlying conceptual dimensions. As Van Gestel-Timmermans et al. (2010) conclude, it is advisable to use the scale as a whole rather than using the subscales. Further studies need to examine whether there are differences in the factor structure of the HHI in different samples and cultures.

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# Hesiod

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## Birth, Education, Work History, and Main Contributions

The poems of Hesiod of Ascra (late eighth/early seventh century before common era) provide some insight into the lives of people of his generation and their assessments of what is good or bad. They lived in a world that was regarded as intelligibly ordered and fundamentally understandable, although filled with divine influences ranging from the purely mysterious to the fairly anthropomorphic Olympian gods. The connotative range of the concept of divinity for ancient Greeks was significantly different from its range today. Anything imagined as immortal, ageless, and capable of independent motion or power was regarded as divine. Hence, for example, when the sixth-century BCE Milesian philosopher Thales posited water or Anaximander posited some indefinite but spatially and temporally unlimited stuff as the ultimate building material of the world, that material would have been regarded as divine. Anaximenes (c. 546 BCE) is reported to have believed that the ultimate building material was air or "dark mist" and "gods and divine things" originated from that material (McKirahan, 1994, pp. 31–48). In the Apology, an irate Socrates rhetorically challenged his accusers with the question "Do I not even believe that the sun or yet the moon are gods, as the rest of mankind do?" (Plato, 1914, p. 99).

The following passages from Hesiod's Works and Days indicate his views of some key features of a good life for individuals and communities:

> Those who give straight judgments to foreigners
> and citizens and do not step at all aside from justice
> have a flourishing city and the people prosper in it.
> There is Peace, the nurse of children, throughout the land,
> and wide-seeing Zeus never ordains harsh war for them.
> Famine and Disaster never attend men of straight judgment,
> but with good cheer they feed on the fruits of their labors.
> For these the Earth bears the means of life in abundance…
> But for those who have thoughts of evil violence and
> cruel deeds, wide-seeing Zeus son of Kronos has ordained justice.
> Often indeed the entire city of an evil man suffers, …
> Famine and Disease together, and the people perish.
> Women do not give birth, but houses are diminished… (McKirahan, 1994, p. 14)

Although these lines contain names of deities long discarded by people today (e.g., Peace, Famine, and Disaster), they also contain familiar themes of the good life, i.e., flourishing and prosperous communities, populated by honest people, living in peace, enjoying the fruits of their labor, without worries about where the next meal will come from, with an absence of disease, and with ► justice for all. Later in the same poem, Hesiod describes the antithesis of a good society through a kind of inversion of these themes. The bad life is characterized as one in which.

> A father will not be like his children nor will they be at all
> like him, nor will a guest be friendly to his host
> or comrade with comrade or brother with brother as before.
> They will quickly come to dishonor their parents and they grow
> old, …
> There will be no thanks for one who keeps his oath or is just
> or good, but men will rather praise evildoers and violence…
> The evil person will harm the better man,
> addressing him with crooked words.... Bitter greed will be left
> for mortal humans, and there will be no defense from evil. (McKirahan, 1994, p. 17)

In contemporary terms, one might say that Hesiod's bad society is one in which the institution of morality has been totally undermined, including people's sense of justice, resulting in the total destruction of its social capital.

There is an anomaly with this author because his two surviving poems seem very much at odds. It has been proposed that he was writing in two different registers: one (Theogony) for performance competition before elite judges – praising the justice of kings – and the other (Works and Days) for general consumption, condemning the rich and promoting the antiaristocratic ethic of the common farmer, very different. Note that in the "town" where the "gift-devouring kings" dispense "justice" for a fee, Hesiod describes conditions that look a lot like the second quotation given here (his vision of complete decline in the last age of the world).

## Cross-References

▶ Homer

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# Heterogeneity

▶ Cultural Diversity

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# Heterogeneous Social Support Index

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## Synonyms

Modern prejudice; Racism; Sexism

## Definition

This index was designed to measure the degree to which one's social support network is heterogeneous.

## Description

Following work by McConahay (1986); Morrison, Morrison, Pope, and Zumbo (1999); and Swim, Aikin, Hall, and Hunter (1995), the index was introduced in Michalos and Zumbo (2001) as one of several indexes designed to provide an overview of people's attitudes and beliefs concerning the cultural or ethnic background of others. The index was formed by calculating respondents' average score on the following four items.

The cultural/ethnic background of people who have:

1. Shown they respect and appreciate you
2. Given you most encouragement and reassurance
3. Given you the most useful information and advice
4. Shown they really care about you

On a 5-point ▶ Likert scale, a score of 1 would mean that the respondent's most intimate social support network was comprised of people whose cultural or ethnic background was perceived to be "exactly the same" as the respondent's. A score of 5 would mean that the respondent's most intimate social support network was comprised of people whose cultural or ethnic background was perceived to be “totally different” from the respondent’s.

The average score for 719 respondents 18 years or older drawn from a random sample of households in Prince George, British Columbia, was 2.5, with a range from 1.0 to 5.0. The average item-total correlation was r = 0.65, with a Cronbach reliability coefficient alpha of 0.82.

## Cross-References

- ► Happiness
- ► Life Satisfaction
- ► Perceived Quality of Life
- ► Subjective Well-being

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# Heterogeneous Socializing Network Index

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## Synonyms

Modern prejudice; Racism; Sexism

## Definition

This index was designed to measure the degree to which one’s socializing network is heterogeneous.

## Description

Following work by McConahay (1986); Morrison, Morrison, Pope, and Zumbo (1999); and Swim, Aikin, Hall, and Hunter (1995), the index was introduced in Michalos and Zumbo (2001) as one of several indexes designed to provide an overview of people’s attitudes and beliefs concerning the cultural or ethnic background of others. The index was formed by calculating respondents’ average score on the following 12 items.

The cultural/ethnic background of:

1. Your closest friends
2. People in most social functions you attend
3. Your best friends at work
4. Most of your friends
5. Your childhood friends
6. People in social gatherings you enjoy most
7. Most guests in your home
8. Most people who invite you to their home
9. People who attend your place of worship
10. Most of your relatives
11. Most of your voluntary organizations
12. People with whom you feel most comfortable and secure

On a 5-point ► Likert scale, a score of 1 would mean that the network of people with whom a respondent did most of his or her routine socializing was comprised of people whose cultural or ethnic background was perceived to be “exactly the same” as the respondent’s. A score of 5 would mean that the network of people with whom a respondent did most of his or her routine socializing was comprised of people whose cultural or ethnic background was perceived to be “totally different” from the respondent’s.

The average score for 729 respondents 18 years or older drawn from a random sample of households in Prince George, British Columbia, was 2.4, with a range from 1.0 to 5.0.

The average item-total correlation was r = 0.68, with a Cronbach reliability coefficient alpha of 0.87.

## Cross-References

- ▶ Happiness
- ▶ Life Satisfaction
- ▶ Perceived Quality of Life
- ▶ Subjective Well-being

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# Heteronormativity

▶ Homophobia and Transphobia

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# Heteroscedasticity

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## Definition

The heteroscedasticity is a problem derived from the fact that the variance of some term of disturbance is different from the variance of the rest of terms of disturbance. This is when the variance of the terms of disturbance is not constant which remains reflected in the fact that the elements of the principal diagonal of the variance and covariance matrix of the terms of disturbance are not equal among them.

Habitually it appears when one works with cross-section data, but it is not exclusive, that is to say, with temporary series also it can appear.

## Description

### Reasons That Can Cause Heteroscedasticity

The reasons that can cause heteroscedasticity are included in three categories:

1. Theoretical: when one works with cross-section data with sample units that present a very heterogeneous behavior. In this sense, a classic example is that of the expenditure on consumer goods of the families that is explained by the income. The families with low levels of income will have a very homogeneous behavior between them since their expense in consumer goods will represent a proportion very raised from their income destined to cover the basic needs. Nevertheless, the families with higher income will have more heterogeneous guidelines of consumption between them because once their basic needs are satisfied, they will have a major surplus of income that they will be able to destine to another type of consumption or to the savings. In this case we will have a heteroscedastic behavior because as the familiar income increases, there is an increase in the variability of the consumption. Those with higher incomes display a greater variability of consumption.
2. Derivatives of the form in that the information is gathered.
3. Spurious: due to the breach of other basic hypotheses of the model of regression, for example, the omission of relevant variables or the existence of structural change.

### Consequences

If a model of regression is estimated under the presence of heteroscedasticity by ordinary least squares (OLS), the obtained estimators fulfil the property of unbiased and of consistency but not the property of efficiency (Gujarati & Porter, 2009). In order to guarantee the property of efficiency (besides it of biased and of that of consistency), the method of estimation adapted is that of generalized least squares (GLS). Briefly, this method consists of considering the structure of the variance and covariance matrix of the term of disturbance in the process of estimation. In the case that the above-mentioned structure is unknown, it will be necessary to establish some supposition on it. In this sense, the most habitual suppositions are:

1. The variance of the terms of disturbance is directly proportional to a variable or to the square of a variable Z.
2. The variance of the terms of disturbance is inversely proportional to a variable or to the square of a variable Z.
3. The variance of the terms of disturbance is a linear function of the variable Z (additive heteroscedasticity).
4. The variance of the terms of disturbance is an exponential function of the variable Z (multiplicative heteroscedasticity).

### Detection

In the econometric literature we can find several methods to test for the presence of heteroscedasticity, for example, the Breusch-Pagan test (1979), the White test (1980), the Goldfeld-Quandt test (1965), and the Glejser test (1969) among others.

## Cross-References

- ▶ Bivariate Regression
- ▶ Homoscedasticity
- ▶ Intercept, Slope in Regression
- ▶ Least Squares Regression Line
- ▶ Linear Regression Model
- ▶ Logistic Regression
- ▶ Multiple Regression
- ▶ Random Effects Regression for Panel Data
- ▶ Regression Coefficients

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# Heterosexism

- ▶ Disadvantaged Populations
- ▶ Homophobia and Transphobia

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# Heterosexual

- ▶ Sexual Orientation

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# HHI

- ▶ Herth Hope Index

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# Hidden Addiction

- ▶ Addiction, An Overview

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# Hidden Unemployment

- ▶ Labor Markets and Underemployment

## Hidden Variables

▶ Latent Variables

## Hierarchical Linear Modeling

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### Synonyms

Mixed effect modeling; Multilevel analysis; Multilevel modeling; Random coefficient modeling; Random effect modeling; Variance component modeling

### Definition

Hierarchical modeling is a form of regression analysis that is appropriate when the assumption that the observations are independent of each other is violated because of a shared context. Hierarchical linear models are used to determine the relationship between a dependent variable at the lowest level of aggregation and a number of independent variables which may be measured at different levels of aggregation.

### Description

Linear regression models are used to examine the relationship between an outcome (or dependent variable) and one or more explanatory (or independent) variables. One of the assumptions underlying such a model is that the residual error terms are independently distributed. Hierarchical linear (or multilevel) models are used in the situation in which this assumption does not hold due to the clustering of observations within contexts. If the correlation between observations within their contexts is ignored – that is, if a single level regression model is applied to multilevel data – then the standard errors of the resulting parameter estimates will tend to be underestimated. Moreover, the parameter estimates themselves may be biased by the failure to take the clustering of the data into account.

Much of the pioneering research in multilevel models was undertaken in the field of education. Several children are typically taught by the same teacher, and children at the same school share a wider educational environment. So if there are contextual effects – that is, if the teacher or school may influence student outcomes such as educational attainment – then observations made on two students from the same class or school cannot be considered to be independent. General introductions to the method include the texts by Gelman and Hill (2007), Goldstein (2011), Raudenbush and Bryk (2002), and Snijders and Bosker (2011); more focused subject introductions related to the health sciences are provided by Goldstein, Browne, and Rasbash (2002), Leyland and Goldstein (2001), and Leyland and Groenewegen (2003). An important resource is the glossary for multilevel analysis written by Diez-Roux (2002).

The educational examples of pupils nested within a hierarchy of teachers and schools can be transferred in a straightforward manner to contexts relevant to quality of life research with, for example, patients nested within areas, health-care settings, or providers. But multilevel models may be applied in a range of situations beyond the standard hierarchical structure; designs that can be thought of as multilevel include repeated measures or panel designs, repeat cross-sectional studies, and multiple response models. Some software can also fit multilevel designs that do not conform to a strict hierarchy: cross-classified designs, where there may be overlap between higher-level units (such as hospital of treatment and area of residence), and multiple membership models, which allow an individual to be a member of more than one higher-level unit (e.g., a patient attending a number of hospitals over a course of treatment).

An example of the application of multilevel analysis of ▶ quality of life comparing different neighborhoods is given by Wu, Ohinmaa, and Veugelers (2010). They studied the health-related quality of life of 10–11-year-old (fifth grade) children, analyzing the influence of sociodemographic factors and neighborhood characteristics. Another important research area within quality of life research is ▶ response shift in longitudinal studies. This refers to the situation in which an individual's assessment of their quality of life changes over time as they adapt to their circumstances. An example of a multilevel study in this area is Lowy and Bernhard (2004). A final example relates to making comparisons between treatments; King, Kenny, Shiell, Hall, and Boyages (2000) applied multilevel analysis to assess the impact of time, treatment, and patient characteristics.

A simple two-level hierarchical linear regression model can be written as

$$y_{ij} = \beta_0 + \beta_1 x_{1ij} + \beta_2 x_{2j} + \beta_3 x_{1ij} x_{2j} + u_{0j} + e_{0ij} \tag{1}$$

where $y_{ij}$ is the outcome for individual i in context j, $\beta_0$ is the intercept, $x_{1ij}$ is an individual level (level 1) covariate with corresponding regression coefficient (slope) $\beta_1$, $x_{2j}$ is a contextual variable that applies to all individuals in context j with corresponding regression coefficient $\beta_2$, $e_{0ij}$ is the individual error term (residual), and $u_{0j}$ is the contextual residual or effect. The level 2 covariate may be a directly observed contextual variable (such as the physical location of a hospital in terms of the urban or rural nature of its surroundings) or an aggregation of individual characteristics (such as the mean income of individuals in an area). Equation 1 also contains a cross-level interaction between the individual and contextual variables with corresponding regression coefficient $\beta_3$.

Both $u_{0j}$ and $e_{0ij}$ are regarded as random variables, and assumptions are made about their distribution. In a hierarchical linear model, the $e_{0ij}$ are assumed to be normally distributed; a common assumption is that the $u_{0j}$ are also normally and identically distributed:

$$u_{0j} \sim N\left(0, {\sigma_{u0}}^2\right)$$

$$e_{0ij} \sim N\left(0, {\sigma_{e0}}^2\right)$$

Although the $u_{0j}$ are residuals, their effects are common across all individuals who share the same context. For this reason the higher-level residuals or effects are of substantive importance in their own right when looking at measures of institutional performance (Goldstein & Spiegelhalter, 1996).

We can use the variances of the residuals at each level to estimate the intraclass correlation coefficient $\rho_I$:

$$\rho_I = {\sigma_{u0}}^2 / \left({\sigma_{u0}}^2 + {\sigma_{e0}}^2\right)$$

This is the proportion of the total variance not explained by the regression model that is attributable to the higher-level units and will range from 0 (when there is no contextual effect) to 1 (when there is no variation between individuals within contexts, having adjusted for the covariates in the model). $\rho_I$ is also equal to the expected correlation between responses for two individuals who share the same context (having adjusted for the covariates in the model).

Just as the intercept or mean can vary between higher-level units, so can the relationship between the dependent and independent variables. Equation 1 can be extended to allow the coefficient of $x_{1ij}$ to vary at random across contexts by the addition of an additional higher-level random effect $u_{1j}$:

$$y_{ij} = \beta_0 + \beta_1 x_{1ij} + \beta_2 x_{2j} + \beta_3 x_{1ij} x_{2j} + u_{0j} + u_{1j} x_{1ij} + e_{0ij} \tag{2}$$

This random slopes or random coefficients model requires assumptions to be made regarding the joint distribution of the two higher-level residuals $u_{0j}$ and $u_{1j}$. It is common to assume that these residuals are bivariately normally distributed (and not independent):

$$u_{0j} \sim N\left(0, {\sigma_{u0}}^2\right)$$
$$u_{1j} \sim N\left(0, {\sigma_{u1}}^2\right)$$
$$\mathrm{Cov}\left(u_{0j}, u_{1j}\right) = \sigma_{u01}$$

Hierarchical linear regression models can be estimated using most standard statistical software or specialist packages including MLwiN and HLM. This class of models can also be extended to include discrete responses (sometimes known as generalized linear mixed models).

## Cross-References

- ▶ Ecological Fallacy
- ▶ Intraclass Correlation Coefficient (ICC)
- ▶ Linear Regression Model
- ▶ Logistic Regression
- ▶ Longitudinal Data Analysis
- ▶ Mixed Effects Models
- ▶ Regression Coefficients

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# High School Completion Rates

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## Synonyms

Dropout rates; Early school-leavers; Successful completion of upper secondary programs

## Definition

The completion rate describes the proportion of students who enter a high school program and who complete it successfully. The completion rate differs from the dropout rate or number of early school-leavers in that the latter two categories measure the proportion of students who leave high school before they graduate with a regular diploma.

## Description

How completion rates are calculated depends on the data available. Different indicators are developed from, for example, cross-sectional and individually tracked data systems:

- A basic indicator, based on aggregate data, as the total number of students who graduate from high school programs divided by the total number of students who entered in these programs N years before (with N, the program's duration). This indicator does not capture grade retention, transfers into the system, migration in and out of the system, etc., but is used as a proxy when data information is not available.
- A sophisticated indicator, based on a cohort that follows a group of students over time from when they entered high school until they left. It requires data systems that can track students or groups of students over time, systems that are not available in all countries.

The completion rates provided through longitudinal studies of individuals tend be considered the "gold standard." They provide extensive contextual information about the students who complete or fail, transfer/migrate in and out of the system, and their social and school backgrounds. This is important information, used to analyze which factors might be associated with completing or not completing high school programs. These kinds of analyses, in turn, can help policy makers develop appropriate intervention programs. Because of their cost and complexity, longitudinal studies are not undertaken in all countries, and when they are, they are not conducted frequently enough to obtain the most current information. The lack of available data is one of the factors that make difficult to compare high school completion rates across (and even within) countries. Some other factors include the wide variety of definitions and indicators used throughout the literature and the wide variety of education systems and programs within those systems (Swanson, 2004; United States Government Accountability Office, 2005). The paths students follow in high school are indeed more numerous, complicated, and interconnected than is often acknowledged, which makes it difficult both to calculate this indicator and to compare data internationally.

## Discussion

Nearly every country has seen an increase in its population's level of education. Yet, while many countries now aim to make secondary education universal, few actually achieve this goal. But it is an important objective: not only is the global labor market demanding a more highly educated workforce, but OECD studies show that the higher the level of educational attainment, the happier the individual and the more he or she plays an active role in society (OECD, 2012a).

High school graduation is a prerequisite for attending universities and other higher education institutions and is increasingly seen as a necessity for individuals in advanced economies. Students who do not graduate from high school are at a serious disadvantage compared to their peers who do. They are much less likely to obtain good jobs or attend postsecondary schools. They are more likely to be unemployed and to earn less over their working lives. The demands for a more highly skilled labor force will make it even harder for such youth to gain a foothold in the economy (OECD, 2012b).

There are many reasons – often highly individual – why some young people give up education prematurely: learning difficulties, social problems, or a lack of motivation, guidance, or support. Students in certain subgroups, such as those who are economically disadvantaged or are in certain migrant groups, have graduated from high school at substantially lower rates than their peers (European Commission DG EAC, 2005).

Early school-leaving has serious implications for both individuals and society. Thus, reducing the number of students who drop out before the end of secondary education is now recognized as a crucial policy objective in many countries (Balfanz, 2010; OECD, 2012c). Efforts to this end would be greatly aided by internationally comparable measures of these rates.

## Cross-References

- ▶ Education
- ▶ Higher Education
- ▶ Quality of Life
- ▶ Unemployment

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# High School Dropout

- ▶ Early School Leaving
- ▶ School Dropout

# Higher Education

- ▶ Postsecondary Education

# Higher Education Quality

- ▶ Institutional Quality and State Budget Cuts

# Higher Education: Human and Social Capital Effects

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## Definition

The use of the term "tertiary education" has been displacing the term "higher education." Tertiary education encompasses a broad diversity of postsecondary (adult education, leisure courses, and short training courses at a technical level) and higher educational institutions besides universities and colleges, such as polytechnics and technological institutes targeted to skill training and competence formation to satisfy labor market demands. However, some authors (Marginson, 2011; Morin, 2002) claim that universities have additional social roles that surpass this instrumental view of knowledge as a space of construction of citizenship, of viable future of what has been named as "knowledge societies," and may parallel Habermas' public sphere, a site for criticism, pluralism, and discourse to promote social integration, networking, and global collaboration. Various civil rights movements and social protests have emerged in universities. Because of its capacity to form self-altering agents, public higher education can contribute to democracy and the expansion of liberties.

## Description

### The Social Role of Higher Education

Participatory rates in higher education have been increasing over the years, and according to the

World Bank (2000), the number of students will rise to 150 million in 2025, but there is a tension between "inherited merit" and formal equality toward the application of some modes of affirmative action for minorities.

Inequality in tertiary education is, to a large extent, an extension of inequality at lower levels of education, reflecting structural barriers (income, ethnicity, gender, language, culture, religion, disability, caste, etc.). In most Latin American countries, social selective factors associated to differential quality standards in the basic education modalities operate, resulting in high desertion rates and low terminal efficiency rates (Sverdlick, et al. 2005). Inequality is also present in developed countries: early tracking in the Netherlands discriminates against immigrant children; 50 % of the richest quartile in the USA has access to higher education, but only 8.3 % of youth (15–24 years) of the lowest quartile does so (Salmi, 2011).

Higher education institutions have gone through different processes of expansion, differentiation, and diversification, especially during the second half of the twentieth century, in a context of neoliberal policies that tended to commercialize and privatize social and educational institutions. The public financial restrictions experienced in different world regions promoted the expansion of private options and institutions of doubtful quality standards to absorb an increasing demand of educational services of a growing number of rejected youth to public universities. The differentiation by economic stratification of many public educational facilities (federal/state/municipal/city) reproduces social segmentation, confinement, and quality standards that are not comparable and leads to very different life conditions (Barreyro, 2009; Bourdieu & Passeron, 2004; Dávila et al., 2005).

Contrary to this progressive isolating and segmenting tendency, the concept of "civic university" stresses its social role in providing opportunities for the society of which it forms part, engaging as a whole with its surroundings. Indonesia has developed a second path of admission named "regional excellence seed" to provide access to ethnic minorities. Indigenous or tribal universities exist in North America since the 1960s in reserve territories. They have been an important space for social cohesion and ethnic identity and have experimented an important impulse complementing its courses with online programs of universities from different parts of the world. Following this model, intercultural universities have been created in indigenous zones of Mexico, targeted to specific ethnic groups, using their indigenous languages to construct knowledge. Small in number, they have attracted indigenous women in spite of the cultural tradition of exclusion (Rodríguez & Aguilera, 2009; Didou Aupetit & Remedi Allione, 2009).

Universities can represent an important cultural niche of multiple expressions of knowledge society, which generate new ways of producing and disseminating knowledge such as the transdisciplinary structure of research and the intensive use of horizontal networks. Besides the instrumental and skill generation demands of the labor market, university activities have a social orientation that conform a legacy of common identity, construct citizenship, and build a viable future. Universities can contribute to self-sustained development in several ways by (a) intensive use of ICTs and recycling and ecological policies in academia and administration; (b) increasing quality with equity with flexible curricula, ensuring basic, generic, and interdisciplinary competencies through foundation courses, with extension and mobility programs; increasing community services and partnerships; and assuring student, faculty, and staff networking for lifelong learning and partnerships; (c) bridging with other levels of education and promoting universal Internet connectivity in schools; and (d) transferring systemic solutions to boost local self-development (Arredondo, 2011). Policies that finance free access to universities along with other measures that may assure real equity of opportunities provide civic opportunities of engagement, social participation, and envisioning in an autonomous context that may mobilize social changes (Tonon de Toscano, 2009).

The potential of implementing national lifelong education programs with open learning strategies at the tertiary education level can have a social inclusive impact on promoting personal development, active citizenship, and employability through training of different population cohorts. This is the case of the Danish dual system of formal education supported by the Danish General Adult Education Act (Hholm-Nielsen, 2011). Argentina has also a similar dual, free public tertiary education system, although it concentrates on the universities' options, which cover almost 90 % of the total population of students (Sverdlick et al. 2005).

## Contribution of Migration to Diversity in Higher Education

One important source of diversity among higher education students in developed countries is the amount of foreign students, which must be distinguished from students that come from established migrant communities. Even in countries with very low Gini coefficients such as Norway, the levels of social integration and quality of life of these groups are considerably below national averages, are underrepresented in higher education, and show differentiated rates of educational profiles depending on their western/non-western country of origin. Immigrants of non-western origin are more likely to drop out from education, face discrimination while searching for a job, be underpaid in their first career years, and are more likely to suffer from psychological and emotional diseases (Pinheiro, 2010). But beyond their country of origin, some qualitative studies emphasize the need to also consider other different levels of ethnic identity (clan, ethnic group, nation) that may modulate their level of social participation and help explain how their ethnical background can be used as a resource to civic participation or as a path to segregation (Fangen, 2007).

## Cross-References

▶ Education
▶ Inequality
▶ Knowledge
▶ Migration, an Overview
▶ Psychological Well-Being
▶ Social Cohesion

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# Higher Education: Institutional Effects

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## Synonyms

Benefits of college; Cultural and organizational effects; Modern social goods; Tertiary education

## Definition

Quality of life is a multi-headed beast. It has both subjective and objective components. It has both individual and societal dimensions.

Here, we argue that ▶ higher education is positively tied to qualities of life that are associated with modern social goods (e.g., civil liberties, gender equality) and negatively tied to those qualities of life associated with traditional social goods (e.g., family solidarity, community stability). The differential effects derive from the premise that higher education, at heart, is not a technical-functional apparatus that produces skilled labor and specialized information but rather a religious-cultural apparatus (Frank & Meyer, 2007). Higher education embodies the central conceits of Modernity — faith in the universal and law-like properties of the universe and faith in the capacities of individual humans to comprehend and manipulate them. As a cultural apparatus, higher education constitutes modern qualities of life consecrating them with standing and authority. In addition, higher education confers access to modern qualities of life through organizational and cultural means (e.g., degree requirements and taken-for-granted definitions). To demonstrate these arguments, we consider several ingredients of a quality life below.

## Description

### Higher Education and Happiness

Before the seventeenth and eighteenth centuries, the idea of happiness was essentially unknown. The conviction that ▶ happiness has universal and law-like properties, to be understood and manipulated at the level of individual persons, to be measured by surveys and elevated therapeutically, is newer still, rooted in contemporary psychological science. It is a creature of higher education, in other words. Thus, over the past 60 years, researchers have developed measures of individual happiness and ▶ subjective well-being to capture overall satisfaction and quality of life across populations (Veenhoven, 1996). Studies show that countries with the highest levels of education have the highest levels of overall happiness and life satisfaction (Veenhoven, 1996) and furthermore, that education generally has significant positive effects on happiness (Witter, Okun, Stock, & Haring, 1984). From our perspective, higher education not only defines what happiness is but also bestows access to it, on a degree-holding basis. For example, degree holders are better equipped to accommodate goal reorientation than others in response to changing economic circumstances. Higher education constitutes more adaptable and goal-oriented people, and adaptability and goal orientation constitute elements of happiness.

## Higher Education and Health

Education in general is positively associated with ▶ health and negatively associated with mortality (Haveman & Wolfe, 1984). Higher education is associated with better health among men and college-educated people make better use of health services (Pascarella & Terenzini, 2005). More specifically, survey research conducted in Finland shows that higher education is positively associated with greater ▶ sexual satisfaction for both men and women. We argue here that higher education constitutes health and allocates access to it. Higher educational attainment significantly improves health directly as well as indirectly through work and economic conditions, social-psychological resources, and healthy lifestyle. Therefore, education structures inequality through the sorting of people within a stratified system that then shapes the exposure to stressors leading to unhealthy outcomes. It works indirectly by fostering a sense of personal control or efficacy – the belief that outcomes are contingent on one's own actions and that one can control, master, or change the environment (Ross & Wu, 1995). As well, higher education requires the use of analytic skills, inquiry, and data gathering and interpreting. What counts as health, and establishes entrée to it, fundamentally depend on higher education.

## Higher Education and Leisure

Quality of life is also measured by how individuals spend their ▶ leisure time. People with college education are more likely to cultivate hobbies and interests and watch less television (Pascarella & Terenzini, 2005). College-educated people are more likely to engage in cultured leisure activities (Knox, Lindsey, & Kolb, 1993). Works by sociologist Paul DiMaggio show that education is a strong predictor of devoting leisure time to attending concerts, plays, and museums, and it predicts high-brow musical tastes and participation in the arts (DiMaggio & Useem, 1978). More recently, research shows that education is significantly associated with cultural omnivorousness – suggesting that a college education allows people to critically assess and appreciate a whole range of musical genres (Peterson & Kern, 1996). Both the constitution of leisurely domains and also the distribution of access to them depend on higher education.

## Higher Education and Family Solidarity

In contrast to the above, higher education is not tied to quality of life ingredients associated with traditional social goods. Take family solidarity, for example. While research shows a positive effect on a variety of indicators that lead to a more fulfilling and satisfying individual lives, it shows negative associations with traditional family solidarity. Early research on the economic determinants of marriage suggests that women with higher education are less likely to marry than others because of financial independence. With regards to education's effect on ▶ marital happiness, research has found that college-educated people are less satisfied with their marriages than others (Glenn & Weaver, 1978). While marriage continues to be a dominant determinant of overall happiness, research shows that those with higher degrees enter their first marriages much later than those with only high school degrees. Research on the life course and transitions to adulthood shows that educational attainment increases the age of first marriage for both men and women, suggesting that women who do not pursue higher education tend to marry right after high school. In terms of family size, more educated people prefer smaller family size. College-educated women use contraceptives and want fewer children.

## Higher Education and Community Stability

Another factor associated with education that undermines traditional social goods is ▶ geographic mobility. College-educated people are more likely to move farther from their state of birth. Roughly 45 % of college graduates move out of their states of birth by age 30, as compared to 27 % of high school graduates. ▶ Geographic mobility and distance moved is significantly and positively associated with education. The more educated move longer distances (Schwartz, 1976). In research that focuses explicitly on the direct effects of education on geographic mobility, researchers find that each additional year of schooling is significantly associated with a 3 % point increase in the likelihood that a male respondent resides outside his birth state (Malamud & Wozniak, 2010). Using different measures of educational attainment, researchers find that both attending college and graduating from college are significantly associated with a higher probability of out-of-state residence among men (Malamud & Wozniak, 2010). The presumed mechanisms again allude to the socially constructed nature of college as a place where students develop cognitive skills that help them seek out-of-state opportunities and to deal with the psychic costs of moving, fostering openness to new experiences and awareness of national or global issues that may lessen the difficulties of adjustment in a new place. More educated persons are less risk-averse.

In short, we envision higher education and its relationship to quality of life in institutional terms. To the extent that quality of life is associated with modern social goods, higher education is central, both constituting the dimensions of a quality life and allocating access to them.

## Cross-References

- ▶ Education
- ▶ Higher Education

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# High-Level Mobility Assessment Tool (HiMAT)

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## Definition

The majority of mobility scales used in adult neurological rehabilitation have been developed in elderly or stroke populations (Williams, Robertson, & Greenwood, 2004). These scales typically measure mobility at the “inpatient” phase of rehabilitation and include items such as bed mobility, transfers, and walking. Some scales include a step or stair item. These scales are susceptible to a ceiling effect when used to measure mobility in a young traumatic brain injury (TBI) population, where goals may require high-level mobility skills such as running and jumping.

The HiMAT was specifically designed to measure the high-level mobility requirements of young people with traumatic brain injury (TBI) returning to social, leisure, sporting, and employment roles. It was initially developed in the TBI population but has more recently been validated in a diverse adult neurological rehabilitation population (Williams, Robertson, Greenwood, Goldie, & Morris, 2005a, b). Investigation is also underway into the validity of the HiMAT in the pediatric TBI population.

The initial development of the HiMAT sought to achieve several goals. Primarily it was designed to quantify high-level mobility to a greater extent than existing scales. Also important was the clinical utility in that the HiMAT had to be quickly and easily used in almost any clinical environment with minimal dependence on equipment. Items developed for inclusion in the HiMAT had to be simple and easily understood so that there would be minimal impact on performance for people with significant cognitive impairment following TBI.

## Description

The High-Level Mobility Assessment Tool (HiMAT) is a unidimensional measure of mobility. It comprises 10 items which are recorded by stopwatch or tape measure. Patients are allowed a practice trial for each item. Patients are instructed to perform each item at their maximum safe speed, except for the stair items where they are instructed to complete the task at "their normal speed." Performances are then classified by performance quartiles outlined on a scorecard.

The test items are:

1. Walking
2. Walking backward
3. Walking on toes
4. Walking over an obstacle (house brick)
5. Running
6. Skipping
7. Hopping forward on the more affected leg

8a. Bound (onto the more affected leg)
8b. Bound (onto the less affected leg)
9a. Up stairs – dependent
9b. Up stairs – independent
10a. Down stairs – dependent
10b. Down stairs – independent

Most items are scored from 0 to 4. A score of 0 indicates inability to perform the item, while scores of 1–4 represent improving ability on each of the items. Performance on the stair items is only required once; ascending and descending stairs are scored separately. Items 9a and 10a are scored "5" if the patient is able to complete the task independently (reciprocal gait pattern without the use of a rail). They are then rated on the corresponding independent item (9b and 10b). Subjects who require use of a rail or are unable to perform reciprocally are categorized as "dependent." The bounding item is scored separately for each leg.

The HiMAT has been designed so that it can be used in most clinical settings, is minimally dependent on equipment, and is quick to administer. Most tests are performed on a 20 m walkway (performance over the middle 10 m is recorded) or a flight of stairs (14). Equipment required includes a stopwatch, house brick, and tape measure. The HiMAT takes approximately 10 min to administer. Normative values for 18–25-year-old males and females have been developed.

### Psychometric Data

The HiMAT was developed in a population of 103 people with ▶ traumatic brain injury (TBI). The validity and unidimensionality of the HiMAT were established using ▶ Rasch analysis. Concurrent validity was established with the motor FIM ($r = .53$, $p < .01$) and gross function Rivermead Mobility Assessment ($r = .87$, $p < .01$) (Williams, Robertson, Greenwood, Goldie, & Morris, 2006b). The HiMAT had high internal consistency (0.97) and high inter-rater (0.99) and retest (0.99) reliability (Williams, Robertson, Greenwood, Goldie, & Morris, 2006a). The HiMAT was also responsive, with minimal detectable change (MDC) scores +/− 3 points, indicating improvement > 3 points over a 3-month period is clinically significant. The HiMAT was found to be more responsive to change and less susceptible to a ceiling effect when compared to the gross function Rivermead Mobility Assessment.

### Clinical Uses

The HiMAT was developed for people who are independently ambulant yet still experiencing mobility limitations. It is therefore most useful in the outpatient phase or later stages of rehabilitation when clients may have aspirations to return to physically demanding employment roles or social, leisure, and sporting activities. It is less susceptible to a ceiling effect and more responsive to clinically meaningful change in mobility than other existing scales.

The HiMAT was originally developed for the young survivors of traumatic brain injury who may have some high-level goals. It has since been validated in the wider neurological rehabilitation population, so it is applicable for most adults with neurological conditions. Normative values have also been established for males and females to give patients an idea of normal age and sex mobility performances (Williams, Rosie, Denisenko, & Taylor, 2009).

Although the HiMAT is simple and quick to administer, it does require access to a 20 m walkway and a flight of stairs (Williams, Greenwood, & Pallant, 2010). Stair time conversion is valid (if no access is available to a flight of 14 steps) providing there are more than 6 steps.

The unidimensional nature of the HiMAT means there are no dual-task items, so it is able to be used for people with very severe cognitive impairment.

## Cross-References

- ▶ Functional Independence Measure
- ▶ Rasch Analysis
- ▶ Traumatic Brain Injury

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# High-Risk Neighborhoods

▶ Neighborhood Disorder

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# Highway Noise

▶ Traffic Noise Abatement

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# Hilarity

▶ Cheerfulness

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# Hip or Knee Clinical Scores or Tools

▶ Self-Report Functional Status Measures for Hip or Knee Replacement Surgery

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# Hip or Knee-Specific Patient-Reported Outcome Measures (PROMs)

▶ Self-Report Functional Status Measures for Hip or Knee Replacement Surgery

## Historic/Heritage Sites

▶ Arts in British Columbia, Canada

## Historical Museums

▶ Museums and Galleries: Their Social Worth

## History and Quality of Life

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### Description

The first choice in studies of ▶ quality of life in an earlier age is largely determined by the conventions of the discipline in which the topic arises. Students of literature turn to novels, and others in the Humanities consult diaries, memoirs, and biographies. Supplemental to them are works of art; statuary and paintings can yield insights into the sensibilities of an age.

#### The Subjective Mode of Inquiry

In the case of diaries, subjectivity and privacy accentuates their value; rarely were they kept with a view to eventual publication. The invaluable diary of Samuel Pepys (Le Gallienne, 2003), which was ended by his failing eyesight, was written in a code; the diary records Pepys' subjective account of his experienced and rising quality of life. Memoirs are self-serving and intended to rewrite matters of concern to the author. Biographies are useful when attempting to reconstruct the quality of life in an era. Procedurally, biographies present a corpus of information and require skill at reconciling perspectives. Among subjective materials are novels; they can transcend the boundaries of the genre and reveal character as well as the quality of the times. Tolstoy's *War and Peace* and the characters of Charles Dickens are examples. There are short stories, as in Joyce's *Dubliners*, in which themes and characters are presented in an economical way. Of course, fiction is not a substitute for fact, but it can provide a sense of the times in ways meaningful to the analyst. Table 1 schematizes the exploration of quality of life in earlier times by subjective and objective modes of inquiry.

**History and Quality of Life, Table 1** The quality of life in an earlier Era

| The topic | |
|---|---|
| Data | |
| Subjective | Objective |
| Critical reading | Testing hypothesis |
| Literary analysis | Multivariate techniques |
| Criticism | Findings |
| Outcome | |
| Subjective | Objective |
| Literary criticism | Interferences and generalizations |

The more recent the era of interest, the greater the accessibility of resources; they include documents, but also people who have anecdotes, and insights into persons, events, and data. Even objective, numerical data are not immune to idiosyncrasies; there can be insights gleaned into why one test rather than another was employed in a piece of research. A second example discerns personal matters influencing selection or inclusion of incidents in a memoir. The diaries of the well-connected Victorian poet, Arthur J. Munby (Hudson, 1972), and his wife, the laborer Hannah Cullwick (Stanley, 1984), present two quite different accounts of their shared lives.

In all inquiry, whatever the mode, the process begins with choices which are subjective, and it ends on a subjective note as insights and tentative conclusions are sifted and weighed. That is not to say that various stages are irrational, for we can reduce error and bias to a degree by, in advance, developing criteria to guide choices. An example would be the decision to avoid metaphor when the intended voice is detachment or accurate description or a fair and distanced version of past events.

### The Objective Mode of Inquiry

Rather different is the social science approach in which the investigator seeks to represent the past by resort to the data language of number. The term objective merely refers to the format in which information is placed, rather than implying a detached, mechanical perception of past human existence. Subjectivity is evident in choice of topics to pursue and in the language through which findings, however numerical, are presented. The primacy of quantitative data does not exclude incorporation of subjective elements from the humanities to illustrate and augment numerical findings. An example is the valuation placed on data by the intellectual orientation of an author. The unspeakable conditions of early factory life in early nineteenth century Britain were presented as benign in Ure's (1835) *The Philosophy of Manufactures*.

Resort to quantitative materials is productive when the era whose quality of life is examined is fairly close to our own; in particular, recent centuries have seen ▶ public policy influenced by census data. In some cases, census reports aggregate data from previous censuses; an example is the prevalence of ▶ literacy.

### Archives

Information which has occurred over time to the investigator's advantage is not automatically useable. The term protodata connotes the rough form in which early information exists. Drawing on archives containing anthropometric information, Brainerd (2010) assessed the standard of living in the former Soviet Union between 1928 and 1985. A large nineteenth-century archive from the Civil War era was the work of Jeremiah Baxter (1875). He published numbers of "Medical and Anthropological. . ." from several hundred thousand Union army soldiers. From seventeenth century, Ireland Flatman (1989) recovered names and physical descriptions of several hundred people living south of Dublin. The economic index numbers of Kondratieff (1926) describe commodity prices from 1780 to 1922. To trace individuals across the generations, we turn to the worldwide archives maintained by the Church of Latter Day Saints in Salt Lake City, Utah. The holdings consist of more than church records and include ships, manifests, and indents (Jordan, 1991).

An aspect of human development is the series of large-scale studies undertaken in the United States, Great Britain, ▶ New Zealand, and Scandinavia. Procedurally, however, large sets of protodata may be primacy reposes in the act of setting up ways to evaluate such raw materials.

Questions which arise may include:

Are the protodata valid? In the case of early astronomical data, there is the problem of interobserver reliability when recording, e.g., transit times.

Are there lacunae in numbers, in dates, etc.? Is interpolation or extrapolation defensible?

Do protodata occur in a machine-compatible form? Are they copyrighted? Whose permission is necessary?

### Data Analysis

Once data are in a form compatible with computer processing, they lose their temporal quality and become, for purposes of statistical analysis, time neutral; on that basis, they may be subjected to a variety of multivariate analyses. In the end, our use of subjective and objective evidence on the quality of life in earlier days brings us to the point of drawing conclusions. At that point, writing skills and capacity for self-criticism prevail as distant events and people connoting quality of life are brought into our own lives.

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# History of Social Indicators and Its Evolution

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## Synonyms

Development of social indicators; Social indicators movement

## Definition

A classical definition states that ▶ social indicators are statistical time series "...used to monitor the social system, helping to identify changes and to guide intervention to alter the course of ▶ social change" (Ferriss, 1988, p. 601).

Examples are unemployment rates, ▶ crime rates, estimates of ▶ life expectancy, health status indices such as the average number of "healthy" days (or days without activity limitations) in the past month for a specific population, school enrollment rates, average achievement scores on a standardized test, rates of voting in elections, measures of ▶ subjective well-being such as ▶ satisfaction with life as a whole, and composite well-being/quality of life indices such as the ▶ Human Development Index.

This entry describes the history of social indicators and its evolution. It draws upon and updates Land (2000).

## Description

### The Social Indicators Movement of the 1960s and 1970s and Its Aftermath in the 1980s

The term "social indicators" was born and given its initial meaning in an attempt undertaken in the early 1960s by a scholarly panel appointed by the American Academy of Arts and Sciences to conduct a study for the United States National Aeronautics and Space Administration the purpose of which was to detect and anticipate the nature and magnitude of the second-order consequences of the space exploration program for the American society (Land, 1983; Noll & Zapf, 1994). Frustrated by a lack of sufficient data to detect such effects and the absence of a systematic conceptual framework and methodology for analysis, some of those involved in the Academy project attempted to develop a system of social indicators – statistics, statistical series, and other forms of evidence – with which to detect and anticipate social change, as well as to evaluate specific programs and determine their impact. The results of this part of the Academy project were published in an edited volume bearing the name *Social Indicators* (Bauer, 1966).

The appearance of this volume was not an isolated event. Several other influential publications commented on the lack of a system for charting social change and advocated that the US government establish a "system of social accounts" that would facilitate a cost-benefit analysis of more than the market-related aspects of society already indexed by the national income and product accounts (see, e.g., National Commission on Technology, Automation and Economic Progress, 1966; Sheldon & Moore, 1968). The need for social indicators also was emphasized by the publication of a 101-page *Toward a Social Report* document on the last day of President Lyndon B. Johnson's administration in 1969. Conceived of as a prototypical counterpart to the annual economic reports of the president, each of its seven chapters addressed major issues in an important area of social concern (health and illness; ▶ social mobility; the physical environment; income and ▶ poverty; public order and safety; learning, science, and ▶ art; and participation and ▶ alienation) and provided its readers with an assessment of prevalent conditions. In addition, the document firmly established the link of social indicators to the idea of systematic social reporting for the purpose of public enlightenment.

Generally speaking, the sharp impulse of interest in social indicators in the 1960s grew out of the movement toward collection and organization of national social, economic, and demographic data that began in Western societies during the seventeenth and eighteenth centuries and accelerated in the twentieth century (Carley, 1981). The work of sociologist William F. Ogburn and his collaborators at the University of Chicago in the 1930s and 1940s on the theory and measurement of social change is more proximate (Land, 1975). As chairman of President Herbert Hoover's Research Committee on Social Trends, Ogburn supervised production of the two-volume *Recent Social Trends* (1933), a pathbreaking contribution to social reporting. Ogburn's ideas about the measurement of social change influenced several of his students – notably Albert D. Biderman, Otis Dudley Duncan, Albert J. Reiss, Jr., and Eleanor Bernert Sheldon – who played major roles in the emergence and development of the field of social indicators in the 1960s and 1970s.

At the end of the 1960s, the enthusiasm for social indicators was sufficiently strong and broad-based for Duncan (1969) to write of the existence of a social indicators movement. In the early 1970s, this led to numerous developments in the United States, including the establishing in 1972, with National Science Foundation support, of the Social Science Research Council Center for Coordination of Research on Social Indicators in Washington, D.C.; the publication of several major efforts to define and develop a methodology for the measurement of *indicators of subjective well-being* (Andrews & Withey, 1976; Campbell & Converse, 1972; Campbell, Converse, & Rodgers, 1976); the commencement of a federal government series of comprehensive social indicators books of charts, tables, and limited analyses (U.S. Department of Commerce, 1974, 1978, 1980); and the initiation of several continuing data series based on periodic sample surveys of the national population (such as the annual National Opinion Research Center's General Social Survey and the Bureau of Justice Statistics' annual National Crime Victimization Survey).

In addition, the concept of social indicators spread internationally on large scale in the 1970s with the publication in 1974 of the first volume of the journal ▶ Social Indicators Research and the spread of social indicators/social reporting concepts and programs to numerous other nations and to international agencies, such as the United Nations and the Organization for Economic Cooperation and Development. Institutionally, under the leadership of Wolfgang Zapf, the German Sociological Association appointed a Committee on Social Indicators in 1972, which was instrumental in the formation of Working Group 6 on Social Indicators and Social Reporting of the International Sociological Association (ISA) in 1988. This Working Group promoted international attention to social indicators by serving as a network to facilitate the exchange of information and by organizing sessions on social indicators and ▶ quality of life topics at the meetings of the ISA held every four years. By 2010, the Research Committee was sufficiently strong and well established to become Research Committee 55 of the ISA.

In contrast to the 1970s, however, social indicators activities generally slowed in the 1980s, as funding cuts led to the closing of the Center for Coordination of Research on Social Indicators; the discontinuation of related work at several international agencies; the termination of government-sponsored social indicators reports in some countries, including the United States; and the reduction of statistical efforts to monitor various aspects of society. Several explanations have been cited for this turnabout (Andrews, 1989; Bulmer, 1989; Innes, 1989; Johnston, 1989; Rockwell, 1987). Certainly, politics and the state of national economies in the early 1980s are among the most identifiable proximate causes. In addition to these immediate factors, however, there was a perceived lack of demonstrated usefulness of social indicators in public policymaking.

## Social Reporting in the 1990s

As the decade of the 1990s unfolded, the model of a comprehensive national social report in the tradition pioneered by Ogburn and Olson clearly had faltered in the United States, at least in the sense of federal government sponsorship and/or production. But the key ideas of social monitoring, reporting, and forecasting were evident to greater or lesser extents in the production of continuing, periodic subject-matter-specific publications by various federal government agencies with specific portfolios of responsibilities in such areas as science, education, and crime and justice (Land, 2000). Special topics involving groups of federal agencies also receive attention from time to time. For instance, the Federal Interagency Forum on Child and Family Statistics began in 1997 an annual publication on *America's Children: Key National Indicators of Well-Being*. In addition, numerous private research organizations, policy institutes, and scholars in the United States continued to produce reports, monographs, and books interpreting social trends and developments in various areas of social concern.

In contrast to the situation in the United States, comprehensive social reports/social indicators compendiums continued to be published periodically in several other countries during the 1990s. Examples are the *Social Trends* series published annually since 1970 by the United Kingdom's Central Statistical Office, the *Social and Cultural Report* published biannually by the Social and Cultural Planning Office of the Netherlands, and *Australian Social Trends* published annually by the Australian Bureau of Statistics. Citations and summary reviews of these and other social indicators/social reports publications can be found in the quarterly newsletter and review of social reports, *SINET: Social Indicators Network News* (for access, see the World Wide Web Homepage: http://www.soc.duke.edu/dept/sinet/index.html/).

## Quality of Life as a Unifying Concept

Another development became vividly apparent in the 1990s (Land 1996): The widespread political, popular, and theoretical appeal of the *quality of life (QOL) concept*.

As noted above, this concept emerged and became part of the social indicators movement in the late 1960s and early 1970s as doubts were raised in the highly developed Western industrial societies about economic growth as the major goal of societal progress (Noll & Zapf, 1994). The "social costs" of economic growth were cited, and there was increasing doubt about whether "more" should be equated with "better."

The QOL concept which resulted from this discussion was posed as an alternative to the more and more questionable concept of the affluent society and entered discussions of social policy and politics as a new, but more complex, multidimensional goal. As a goal of social and economic policy, QOL encompasses all (or at least many) domains of life and subsumes, in addition to individual material and immaterial well-being, such collective values as ▶ freedom, ▶ justice, and the guarantee of natural conditions of life for present and future generations. The political use of the QOL notion is paralleled in the private sector by the widespread use and popularity of numerous rankings – based on weighted scales of multiple domains of well-being –of the "best" places to live, work, do business, play, etc., be they cities, states, regions, or nations.

The theoretical appeal of the QOL concept as an integrating notion in the social sciences and related disciplines is, in part, due to the perceived *importance of measuring individuals' subjective assessments of their satisfaction with various life domains and with life as a whole*, which builds on the pioneering work on the measurement of subjective well-being reviewed above (Land, Michalos, & Sirgy, 2012). For instance, in the 1990s, QOL becomes a concept that bridges the discipline of marketing research and strategic business policy with social indicators. Marketing is an important social force – with far-reaching direct and indirect impacts on the prevailing QOL in a society – through consumer satisfaction (Samli, 1987; Sirgy & Samli, 1995) and its impact on satisfaction with life as a whole.

The intersection of marketing research with social indicators through the QOL concept led to the organization in the mid-1990s of the

▶ International Society for Quality of Life Studies (ISQOLS; for information about the Society and its activities, see the World Wide Web Homepage: http://www.isqols.org/). ISQOLS sponsors periodic international conferences that bring together researchers from around the world who focus on the study of social indicators, well-being, and the quality of life. ISQOLS supports the *Social Indicators Research* journal, which, through the publication of as many as five volumes per year, now has over 100 volumes in print.

The formation of ISQOLS was followed by a number of initiatives in the creation of publication for research on social indicators and well-being/quality of life studies and the formation of related professional organizations with a focus on these topics. For instance, members of the society also were instrumental in initiating the publication of the ▶ Journal of Happiness Studies, the first volume of which appeared in the year 2000, and ISQOLS sponsors the ▶ Applied Research in Quality of Life journal as its official journal, with its first volume published in 2006. Members of ISQOLS also participated in the formation of the International Society for Child Indicators (ISCI) in 2006. Similar in purpose to ISQOLS but with a focus on the measurement and study of the well-being of children, ISCI also sponsors periodic international conferences and its official journal, ▶ Child Indicators Research, the first volume of which appeared in 2008. Another special focus group to which ISQOLS members have given impetus is the Community Indicators Consortium (CIC; www.communityindicators.net) which was conceived at community indicators conferences co-organized by ISQOLS in 2002 and 2004 and then formally organized in 2005. The CIC publishes special reports and special issues in journals. Most recently, ISOLS members participated in the organization of the Italian Association of Quality of Life Studies (AIQUAV) in 2011.

## Social Reporting in the Early 2000s: Composite Indices of the Quality of Life

As the early decades of the twenty-first century unfolded, it also was evident that the field of social indicators entered a new era of the *construction of summary or* ▶ *composite indices of the quality of life*. Often these indices attempt to summarize indicators (objective and/or subjective) of a number of domains of life into a single index of the quality of life. They thus attempt to answer the original questions motivating the social indicators movement: How are we doing overall? With respect to our past? With respect to other comparable units (e.g., cities, states, regions, nations)? Many of the pioneers of the social indicators movement in the 1960s and 1970s backed away from the development of summary indices to concentrate on conducting basic research on social indicators and the measurement of the quality of life and the development of a richer social data base.

With the tremendous increase in the richness of social data available for many societies today as compared to a few decades ago, a new generation of social indicators researchers has returned to the task of summary index construction. Some examples are as follows:

1. At the level of the broadest possible comparisons of nations with respect to the overall quality of life, the ▶ Human Development Index (United Nations Development Program, 2001), Diener's (1995) Value-Based Index of National Quality of Life, and Estes' (1988, 1998) ▶ Index of Social Progress
2. At the level of comparisons at the national level over time, the ▶ Netherlands' Life Situation Index (LSI; Boelhouwer, 2010), the Australian Unity Well-Being Index (AUWBI; Cummins, Woerner, Tomyn, Gibson, & Knapp, 2005), and the US Foundation for Child Development ▶ Child and Youth Well-Being Index (FCD-CWI; Land, Lamb, & Mustillo, 2001; Land, Lamb, Meadows, & Taylor, 2007)

The field of social indicators likely will see several decades of such index construction and competition among various indices – with a corresponding need for careful assessments to determine which indices have substantive validity for which populations in the assessment of the quality of life and its changes over time and social space.

## Social Indicators and Social Reporting in 2010 and Beyond: Three Types of Indicators

The field of social indicators research and social reporting continues to be intellectually vibrant and active in the production of knowledge of societies, living conditions, and well-being. In addition to the measurement of well-being/quality of life and composite indices themes just described, there appears consensus on the existence and need for three types of indicators – *policy or criterion indicators*, *subjective well-being indictors*, and *descriptive indicators* (Land, 2000).

Based on the premise that social indicators should relate directly to social policymaking considerations, an early definition by economist ▶ Mancur Olson, the principal author of *Toward a Social Report*, characterized a social indicator as a "…statistic of direct normative interest which facilitates concise, comprehensive and balance judgements about the condition of major aspects of a society" (U.S. Department of Health, Education, and Welfare, 1969, p. 97). Olson went on to state that such an indicator is, in all cases, a direct measure of welfare and is subject to the interpretation that if it changes in the "right" direction, while other things remain equal, things have gotten better or people are better off. Accordingly, by this definition, statistics on the number of doctors or police officers could not be social indicators, whereas figures on health or crime rates could be.

In the language of policy analysis (Fox, 1974), social indicators are "target" or "output" or "outcome" or "end-value" variables, toward changes in which some public policy (program, project) is directed. Such a use of social indicators requires (Land, 1983) that (a) members of a society agree about what needs improving; (b) it is possible to decide unambiguously what "getting better" means; and (c) it is meaningful to aggregate the indicators to the level of aggregation at which the policy is defined.

In recognition of the fact that various other meanings have been attached to the term social indicators, the tendency among recent authors is to use a somewhat different terminology for the class of indicators identified by Olson. Building on the Olson approach, MacRae (1985) defined *policy indicators* as "measures of those variables that are to be included in a broadly policy-relevant system of public statistics." With a meaning similar to that of MacRae, Ferriss (1989) used the term *criterion indictors*.

Another class of social indicators has its roots in the research on subjective well-being in the 1970s cited above. This initial research has given birth to a huge literature on *subjective well-being*, ▶ life satisfaction, or ▶ happiness *indicators*. These studies examine aspects of human experiences or domains ranging from the highly specific (house, family, etc.) to the global (life as a whole). A large number of other studies and applications of these concepts and techniques have appeared (for reviews, see Diener, 1994; Diener, Suh, Lucas, & Smith, 1999; Diener, Lucas, Schimmack, & Helliwell, 2009) and continue to appear – one or more studies of subjective well-being indicators can be found in almost any issue of the journal *Social Indicators Research* and in many other social science journals. Early research on the related concept of happiness as an index of well-being was surveyed by Veenhoven (1984).

The connection of subjective well-being to income levels has been a particularly intriguing problem for social indicators researchers ever since Easterlin (1973) finding that income differences between nations predicted national differences in happiness but that the association of happiness with income within countries was much weaker. Recent research has focused on Diener's disaggregation of high subjective well-being into "high life satisfaction, the presence of ▶ positive affect and the absence of ▶ negative affect." From a different perspective, Kahneman and his collaborators distinguished life evaluation from experienced happiness, which is defined by positive and negative affect. And research by Diener and Kahneman (2009) using these conceptual refinements has led to the conclusion that Easterlin was both right and wrong and that his finding needs to be revised in the sense that economic growth might have only a small impact on people's average ongoing feelings of well-being (affect, experienced happiness) but may heighten people's life evaluations. Studies of why income is differently associated with feelings versus life evaluations will no doubt continue to enliven this topic.

Building on the Ogburn legacy of research on social trends, a third approach to social indicators focuses on social measurements and analyses designed to improve our understanding of what the main features of society are, how they interrelate, and how these features and their relationships change (Sheldon & Parke, 1975). This produces *descriptive social indictors* – indices of the state of society and changes taking place therein. Although descriptive social indicators may be more or less directly (causally) related to the well-being goals of public policies or programs and thus include policy or criterion indicators, they are not limited to such uses. For instance, in the area of health, descriptive indictors might include preventive indicators such as the percent of the population that does not smoke cigarettes, as well as criterion indicators such as the number of days of activity limitations in the past month or an index of self-reported satisfaction with health.

The various statistical forms that descriptive social indicators can take are described by Land (1983). These can be ordered by degree of abstraction from those that require only one or two data series and little processing (e.g., an age-specific death rate) to those that involve more complicated processing into a single summary index (e.g., years of life expectancy at age x, years of active or disability-free life expectancy at age x, years of happy life expectancy at age x). Descriptive social indicators can be formulated at any of these levels of abstraction. Moreover, as described in Juster and Land (1981), these indicators can, at least in principle, be organized into demographic- or time-budget-based systems of social accounts.

Even though these three types of social indicators can be distinguished conceptually, it should be emphasized that they are not exclusive. That is, any specific indicator can be both descriptive and criterion, both descriptive and subjective well-being, subjective and descriptive, or have all three attributes. It also is possible, however, for an indicator to be primarily a criterion, descriptive, or subjective well-being indicator.

## Social Indicators and Social Reporting in 2010 and Beyond: Web-Based Social Reports

In concluding this statement on the history and evolution of social indicators and social reporting, one final attribute of the field in the decades beyond 2010 is so evident that it almost escapes explicit notice – the permeation of the field by the Internet and the World Wide Web (WWW).

The notions of social indicators and programs of social reporting commenced long before the innovation and diffusion of the WWW in the 1990s and early 2000s. However, the WWW and the associated availability of all types of information through computers and related high-speed electronic devices now is an ever-present aspect of many lives throughout the world. Social indicators and social reports are no exception. Today, all of the periodic international and national social reports mentioned above and many others are published on the WWW as well as in printed volumes. Indeed, many reports are published exclusively on the Web. This is associated with a change in the nature of human access to information and storage of that information that is likely to continue indefinitely into the future. The implications of this for social indicators and social reporting have yet to be fully described and studied.

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## History of the Convention on Biological Diversity

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### Description

In response to the growing awareness of the international community of the importance of biological diversity to human well-being and ► sustainable development and in recognition of the accelerating threats to species and ecosystems, the United Nations Environmental Programme convened the Ad Hoc Working Group of Experts on Biological Diversity in November 1988 to explore the need for an international convention on biological diversity. Soon after, in May 1989, it established the Ad Hoc Working Group of Technical and Legal Experts to prepare an international legal instrument for the conservation and sustainable use of biological diversity. The experts were to take into account "the need to share costs and benefits between developed and developing countries" as well as "ways and means to support innovation by local people."

By February 1991, the Ad Hoc Working Group had become known as the Intergovernmental Negotiating Committee. Its work culminated on 22 May 1992 with the Nairobi Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity. The Convention was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio "Earth Summit"). It remained open for signature until 4 June 1993, by which time it had received 168 signatures. The Convention entered into force on 29 December 1993, which was 90 days after the 30th ratification. The first session of the Conference of the Parties was scheduled for 28 November–9 December 1994 in the Bahamas.

The Convention on Biological Diversity was inspired by the world community's growing commitment to sustainable development and equitable sharing of the benefits from nature. The Convention is a sister convention to the United Nations Convention to Combat Desertification (refer http://www.unccd.int/main.php) and the United Nations Framework Convention on Climate Change (refer http://unfccc.int/2860.php).

The Convention is serviced by a Secretariat which is based in Montreal. The Secretariat is structured according to the work of the Convention and the decisions of the government body which is referred to as the Conference of the Parties (COP). The COP meets every 2 years and its decisions guide the work of the Convention for the upcoming biennium.

The COP has established seven thematic programs of work (listed below) which correspond to some of the major biomes on the Earth. Each program establishes a vision for and basic principles to guide future work. They also set out key issues for consideration, identify potential outputs, and suggest a timetable and means for achieving these. Implementation of the work programs depends on contributions from Parties, the Secretariat, and relevant intergovernmental and other organizations. Periodically, the COP and the SBSTTA review the state of implementation of the work programs.

The thematic areas include Agricultural Biodiversity, Dry and Sub-humid Lands Biodiversity, Forest Biodiversity, Inland Waters Biodiversity, Island Biodiversity, Marine and Coastal Biodiversity, and Mountain Biodiversity.

The COP has also initiated work on key matters of relevance to all thematic areas. These crosscutting issues correspond to the issues addressed in the Convention's substantive provisions in Articles 6–20 and provide bridges and links between the thematic programs. Some crosscutting initiatives directly support work under thematic programs, for example, the work on indicators provides information on the status and trends of biodiversity for all biomes. Others develop discrete products quite separate from the thematic programs.

The work done for these crosscutting issues has led to a number of principles, guidelines, and other tools to facilitate the implementation of the Convention and the achievement of the 2010 biodiversity target.

*The cross-cutting issues include*:

Aichi Biodiversity Targets
Access to Genetic Resources and Benefit-sharing
Biodiversity for Development
Climate Change and Biodiversity
Communication, Education and Public Awareness
Economics, Trade, and Incentive Measures
Ecosystem Approach
Gender and Biodiversity
Global Strategy for Plant Conservation
Global Taxonomy Initiative
Impact Assessment
Identification, Monitoring, Indicators, and Assessments
Invasive Alien Species
Liability and Redress – Article 14(2)
Protected Areas
Sustainable Use of Biodiversity
Tourism and Biodiversity
Traditional Knowledge, Innovations, and Practices – Article 8(j)
Technology Transfer and Cooperation

At COP 10, 2010, the Governing body referred to as the Conference of the Parties (COP) has reorganized the work of the Convention into 4 strategic and 20 Aichi Targets. The Strategic Goals include Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society; Goal B: Reduce the direct pressures on biodiversity and promote sustainable use; Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species, and genetic diversity; Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services; and Strategic Goal E: Enhance implementation through participatory planning, knowledge management, and capacity building.

Further information about the 20 Aichi Targets is available at: http://www.cbd.int/sp/targets/default.shtml.

## The Convention Recognizes Significant Major Groups

In the context of the Communication, Education and Public Awareness (CEPA) program of the CBD, the involvement of major stakeholder groups is encouraged. The list below provides links to related initiatives:

Business/private sector
Local authorities
Parliamentarians
Universities, academia, and the scientific community

## Indigenous Peoples and Local Communities

In the Convention on Biological Diversity, the international community acknowledged the close and traditional dependence of many indigenous and local communities on biological resources, the vital role that these resources play in their lives and livelihoods, and the important contribution that traditional knowledge can make to the conservation and sustainable use of biological diversity. In recognition of this and acknowledging that indigenous peoples and local communities see themselves as rights-holders under the Convention, issues related to Articles 8(j), 10(c) and related provisions within the Secretariat are dealt with under social, economic and legal matters.

The Conference of the Parties has recognized that the Convention on Biological Diversity is the primary international instrument with the mandate to address issues regarding the respect, preservation, and maintenance of knowledge, innovations, and practices of indigenous and local communities embodying traditional lifestyles relevant to the conservation and sustainable use of biological diversity (Decision VI/10, preambular paragraph 8).

The Parties to the CBD have taken steps to comply with these commitments. The Conference of the Parties (COP), established a subsidiary body – the Ad Hoc Open-Ended Intersessional Working Group on Article 8(j) and Related Provisions – to address these issues and to develop an ambitious program of work, which was adopted by the COP in 2000 and revised at COP 10 (2010), provides the basis for ongoing action on traditional knowledge within the framework of the Convention. COP 11 to be held in India in October 2012 is poised to consider a new major component of work on Article 10(c) – customary sustainable use.

Further information can be obtained at www.cbd.int or email john.scott@cbd.int.

## Cross-References

- ▶ Biodiversity Conservation
- ▶ Cultural Diversity
- ▶ Indicator Framework
- ▶ Indicator Methodology
- ▶ Indicator Selection Criteria
- ▶ Indicators for Assessing Environmental Status
- ▶ Indicators of Ecosystem Change
- ▶ Indigenous Knowledge
- ▶ United Nations Commission on Sustainable Development
- ▶ United Nations Development Programme
- ▶ United Nations Economic Commission for Europe
- ▶ United Nations Educational, Scientific and Cultural Organization (UNESCO)
- ▶ United Nations Research Institute for Social Development (UNRISD)

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http://www.cbd.int/traditional/
www.cbd.int

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# Hitomishiri

▶ Japan, Quality of Life

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# HIV in Malaysia

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## Synonyms

Functional assessment of chronic illness therapy (FACIT); Functional assessment of HIV infection (FAHI); Human immunodeficiency virus

## Definition

HIV is the acronym for human immunodeficiency virus. It is a retrovirus, which, upon entry into the human body, destructs the cells of the immune system. The progressive destruction weakens the body's defenses, and the immune cell counts fall below the critical levels resulting in a variety of infections and diseases, referred to as AIDS-defining illnesses.

Malaysia is in Southeast Asia, consisting of 13 states and three federal territories with 329,847 km$^2$ of land area. Peninsular Malaysia (West Malaysia) has 11 states, and the other 2 are on the island of Borneo (East Malaysia). The northern part of West Malaysia shares the border with Thailand and to the south, by the island of Singapore. East Malaysia shares borders with Brunei Darussalam and the Indonesian province of Kalimantan. The Malaysian population census (2010) revealed that the total population of Malaysia was 28.3 million (male population is 14,562,638 and female population is 13,771,497).

## Description

### The Extent of HIV/AIDS Epidemic in Malaysia

The first three cases of HIV in Malaysia were detected in 1986 (Goh, Chua, Chiew, & Soo-Hoo, 1987). The Malaysian AIDS Council and Malaysian AIDS Foundation (2012) published that from 1986 till 2010, there were 91,362 reported cases of HIV infection. The UNGASS Country Progress Report (2010) described that the HIV epidemic in Malaysia is a "concentrated" epidemic, based on low prevalence rate in the general population (which continues to be less than 1 %) and seemingly isolated high prevalence rates among high-risk groups, such as injecting drug users (IDUs), prison inmates, and female sex workers. Five countries – Russia, China, Malaysia, Ukraine, and Vietnam – have what might be termed as mega epidemics in IDUs, with more than 75,000 registered HIV cases (Wolfe,Carrieri, & Shepard, 2010).

Out of the cumulative reported cases in Malaysia, HIV transmission is largely driven by sharing needles (69.7 %) among IDUs, followed by heterosexual intercourse (17.8 %) and homosexual bisexual contact (2.2 %). The HIV epidemic driven by IDUs changes in trend in East Malaysia, which reported 97.7 % (in Sabah) and 83.6 % (in Sarawak) of their HIV cases acquired the disease via heterosexual activity in 2009 (UNGASS Country Progress Report, 2010). In 2010, in the whole country, the sexual mode of transmission surpassed the other modes of transmission, i.e., at 48.7 %, slightly higher than the transmission via intravenous drug use, which was at 47.6 % (Malaysian AIDS Council & Malaysian AIDS Foundation, 2012).

### Gender Difference in the Risk of HIV Infection in Malaysia

The male to female ratio from the cumulative cases of HIV infections was 9.4:1 (90.4 % males and 9.6 % females). The highest reported infections occur among Malay heterosexual males who were injecting drugs between the ages of 20 and 39. The prevalence of HIV infection in male drug users was estimated to be at 22.1 % (Malaysian AIDS Council & Malaysian AIDS Foundation, 2012). On the other hand, the UNGASS Country Progress Report (2010) stated that in Malaysia, 70 % of HIV infections among women were via heterosexual transmission. The proportion of women reported with HIV has also increased dramatically in the last decade, from 4 % of new cases in 1995 to 18 % of new cases in 2010.

The Ministry of Health data showed that, in 2008, more housewives tested HIV-positive than sex workers, with a ratio of one sex worker for every five housewives (Wong & Nur Syuhada, 2011). This ratio increased further to 5–6 housewives to one sex worker for 2010. Such a ratio is impressive in a prevention campaign to the lay public. However, it is not a true ratio as the number of housewives in Malaysia is larger than the number of female sex workers, and comparison of percentages of HIV infection in both groups is more realistic.

Male lorry drivers and fishermen in Malaysia were among the top 5 occupations with high prevalence of HIV infection. The wives of these men may not be unable to refuse unprotected sex with their husbands. They probably were religiously obligated to obey their husband, or they preferred to save their marriage or keep a roof over their head.

Kelantan which shared its northern border with Thailand has the highest number of women found to be infected since 1986 (World Health Statistics, 2008). Though the male to female ratio of reported HIV cases in Malaysia in 2010 was 4.5:1, a study of 217 HIV cases receiving treatment in the main hospital in the capital of Kelantan displayed a ratio of 1.4:1. In this study, the Malay version of the Functional Assessment of HIV Infection (FAHI) showed that there was no significant difference in the overall QOL and its four domains between the genders after controlling for significant confounders (Hasanah, Zaliha, & Mahiran, 2011).

### Quality of Life in PLWHIV in Malaysia

As in any chronic illness, the Health-Related Quality Of Life (HRQOL) measure is a useful parameter in gauging the state of well-being of people living with HIV (PLWHIV). There are two HRQOL questionnaires specific to HIV infection that were translated to the Malay language and validated to the PLWHIV in the state of Kelantan, Malaysia. They are the World Health Organization Quality of Life (WHOQOL) assessment instrument in patients with human immunodeficiency virus (HIV) infection (WHOQOL-HIV BREF) (Saddki et al., 2009) and the Functional Assessment of Human Immunodeficiency Virus Infection (FAHI) (Hasanah et al., 2011), which is part of the Functional Assessment of Chronic Illness Therapy (FACIT) that was designed by the Center for Outcomes Research and Education (CORE) (FACIT, 2012).

There are similarities and differences in the domains in the above two questionnaires. WHOQOL-HIV BREF consists of 31 items, with 6 domains, which are physical, psychological, level of independence, social relationships, environment, and spirituality domains. FAHI has 50 items, measuring QOL on 5 subscales: physical well-being, emotional well-being, function and global well-being, social well-being, and cognitive functioning.

In a cross-sectional study, on 271 patients with HIV infection attending an HIV clinic in Kota Bharu, Malaysia, those who acquired the HIV infection via a heterosexual route seemed to have a significantly lower social well-being, while those who acquired HIV via drug injection were not associated with losses in the overall QOL or any of its domains (Hasanah et al., 2011). The QOL was measured with the Functional Assessment of Chronic Illness Therapy (FACIT).

The remarkable similarity of the outcomes of the two studies using the two different questionnaires on the same population at 4–6 months apart was the lowest score in the social domain. WHOQOL-HIV BREF assessment on 157 subjects showed the scores in descending order as follows: psychological (0.486), environmental (0.478), physical (0.416), spiritual (0.399), and lowest for the social domain (0.380) (Saddki et al., 2009). FAHI assessment on 271 samples from the same population showed these subscale scores as percentages of possible maximum scores for its respective domain: physical well-being (77 %), cognitive functioning (67 %), functional and global well-being (66 %), emotional well-being (57 %), and social well-being (52 %) (Hasanah et al., 2011). Hasanah et al. found that subjects who were older, infected via heterosexual relationships, and not disclosing the HIV infection to others were associated with poorer social well-being. Items in FAHI's social domain include:

- I feel close to my friends.
- I get emotional support from my family.
- I get support from my friends.
- My family has accepted my illness.
- I am satisfied with family communication about my illness.
- I feel close to my partner (or the person who is my main support).
- I have people to help me if I need it.
- I am satisfied with my sex life.

## Social Repercussions of HIV in Malaysia

Among the Malaysian citizens, the Malays are the predominant ethnic group in Peninsular Malaysia which constitutes 63.1 % (Malaysian population census (2010)). Attitudes towards sex and sexuality, as in all cultures, are highly determined by religion and morals (Social Exclusion, 2001). People with strong cultural and religious values tend to be judgmental towards IDUs, sex workers, and sex among same gender. PLWHIV are perceived as living the punishment of their sinful activities like drug misuse and prostitution. Being infected with HIV is possibly interpreted as having a weakness in character and being sinful. In Malaysia, 67 % of people infected with HIV surveyed reported having experienced discrimination in healthcare settings, including refusal of services, breaches of confidentiality, and verbal abuse, with 25 % noting that these reactions occurred very often (Choo, Paxton, & Kamarulzaman, 2009).

The validation of the opioid substitution treatment (OST) or the methadone maintenance therapy (MMT) in October 2005 (National Task Force on Harm Reduction, 2009) into the mainstream medical treatment probably assisted PLWHIV. Inclusion in the OST or MMT helped in their acceptance and openness of their HIV status. In their visit to a health center for MMT, they socialized with their peers and received nonjudgmental and emphatic care from the staff working in the MMT program.

People who contacted it via a sexual relationship may be subjected to shame either from real social stigmatization or self-perceived stigma. PLWHIV who are innocent of drug and sexual vices may feel that society blamed them for what they had not committed and went into social isolation. It is most difficult for them to be open about their HIV status, and failing in such declaration will keep them outside the reach of medical treatment. Thus, it is not difficult to understand why PLWHIV suffered poorest in social well-being, followed by emotional well-being, and the fact that nondisclosure of HIV status had also adversely affected their social well-being.

## Steps to Overcome Stigmatization in Reaching PLWHIV for Medical Treatment

Beyrer et al. (2010) identified that one of the biggest barriers, and perhaps the most challenging to overcome, is the stigma and discrimination towards HIV-infected people, especially injecting drug users. Since 2005, however, the policy and the public healthcare infrastructure had increased availability of the antiretroviral drugs to PLWHIV, and two medications are provided free of charge, while patients need to purchase only one.

The government of Malaysia played a crucial role in endorsing health services policies in facilitating detection and making accessible the treatment and care for the PLWHIV. However, even with free access to first-line antiretroviral regimens and laboratory monitoring, the number receiving ART in Malaysia remains disproportionately small (Choo et al., 2009).

The Malaysian AIDS Council is a nongovernmental organization (NGO) that played pivotal advocacy and supportive and complementary roles to those provided by the government. The National Association for the Prevention of Drugs (Pemadam), an NGO, on the other hand, works closely with the National Anti-Drug Agency in rehabilitating and offering MMT treatment. Pemadam also works closely with other NGOs and health facilities, with the objective of weeding out the nation’s number one enemy. Mandatory HIV testing in some groups significantly improved detection, e.g.,:

- Muslim couples before marriage (first started in the state of Kelantan)
- Women during antenatal visit
- Drug users in rehabilitation program
- Inmates of compulsory drug treatment centers and prison

Various steps have been implemented with the objectives of reducing the stigma of HIV/drug dependence, as well as increasing the accessibility of care and treatment to PLWHIV. Among them are:

- Improving laboratory facilities in health centers for monitoring of health status of PLWHIV
- Decentralization of ART to health centers
- De-stigmatization campaigns to religious people and the mosques’ personnel
- OST or MMT in mosques or religious centers (Hong, 2011)
- Increasing training of healthcare workers and support staff to be emphatic and nonprejudicial in their service

The mandatory HIV testing for Muslim couples before marriage started in the state of Kelantan, and it has been getting protests from HIV/AIDS experts and civil rights activists. They said that mandatory screening is a serious violation of individual rights and does not prevent the spread of the disease. Prominent activists said that such methods reflect ignorance and inadequate understanding of HIV/AIDS and its effect on individuals. In spite of the protests, the government since 2009 widened the mandatory screening rule to all Malaysian Muslim couples.

Wong and Nur Syuhada (2011) revealed that the discriminatory attitude of Malaysians towards PLWHIV was much more in the rural and the Malay populations, and the stigma was associated with the severity of the illness and towards those who contacted the disease via drug use, prostitution, and homosexual relationships.

The profound perceived HIV/AIDS-related stigmatization by PLWHIV had probably contributed to their reluctance to be tested and denial of their seropositive status. Thus, the Malaysian government with the pressure from the Muslim clerics probably has done right in safe guarding the rights of seronegative partners in avoiding HIV infection from a marriage to seropositive partners that chose not to disclose their HIV status.

## Conclusion

The fight against HIV transmission needs the tolerance and concerted efforts from all governmental officials and NGOs in campaigning against the stigma of HIV infection. HIV/AIDS activists should not be too quick in judging negatively the suggestions that go against practices in developed or Western countries. More research is required to uncover ways to reduce the stigma of HIV so that many PLWHIV in Malaysia will be more open about their status and compliant to the treatment provided by the government.

Clearly, such progress will only be facilitated by supportive perceptions and attitudes by Malaysian religious cleric s, governmental and nongovernmental personnel, and citizens in general.

## Cross-References

- ▶ Methadone Treatment for Opiate-Dependent Persons
- ▶ Stigmatization

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# Holistic Approach

▶ Faceted Action System Theory (FAST)

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# Holistic Medicine

▶ Complementary and Alternative Medicine (CAM)

## Home Background

▶ Socioeconomic Status (SES)

## Home Care

▶ Care, Long-Term

## Home Environment

▶ Housing Quality and Maternal Mental Health
▶ Paid Work and Parent–Child Relationship Quality

## Home Ownership or Renting

▶ Housing Tenure

## Home Quality of Life

▶ Housing and Quality of Life

## Home-Based Work

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### Synonyms

Cottage industry (historically); Flexible work; Homeworking; Telecommuting; Telework

### Definition

Home-based work is the phenomenon of carrying out a significant portion of the activities of a person's main paid employment at home. It is not equivalent to bringing home marginal, undone tasks at the end of a standardized working day at an external workplace. Rather, the home is the principal locus of work, though not necessarily the only place in which this work is done.

### Description

Many aspects of home-based work are pertinent to quality of life research.

#### Positive Outcomes for Quality of Life

Before the industrial revolution spawned large-scale factories as workplaces, production occurred at home according to a system called cottage industry. Raw materials were delivered to homes, products were made from these materials there, and the finished products were collected thereafter for sale to consumers. Women formed the bulk of the workforce in cottage industry, and their welfare was not a primary factor in this phenomenon.

Home-based work can include the manufacturing focus of cottage industry, but it has expanded as a way of accommodating many forms of contemporary employment that can be carried out within the household and that fulfill objectives considered to be of benefit. Although production-line industrial work does not fit the scale or context of the home environment, nor does large-scale, consumer-contact work in the commercial or hospitality sectors, many other jobs that are solitary, sedentary, and involving technology designed for single users can take place within the household. Electronics have greatly facilitated home-based work, first with respect to telephone-based communication and later as part of the personal computer revolution.

Many benefits for quality of life are attached to home-based work. It can reduce commuting time in whole or part, in some cases enabling residential location in idyllic though remote locations.

Time saved from the reduced need to commute can then be redirected to other activities that are potentially more pleasing, satisfying, relaxing, and/or economical (Kugelmass, 1995; Levin, 1998). The reduction of travel time and costs as an objective is gender-neutral.

Women are more likely to find home-based work supportive to the integration of household responsibilities and child care with work throughout the day (Gurstein, 2001; Phizacklea & Wolkowitz, 1995). Although women are more likely than men to multitask, this does not mean that paid work activities at home overlap seamlessly with purely domestic activities. Home-based workers typically evolve their work routines and locations so as to minimize interruptions. Nonetheless, domestic activities such as food preparation and clothes management can be interspersed with work if the latter is done at home. The flexible scheduling of work and nonwork activities at home is reflected in common periods of paid work in the evenings that is not as common among persons with external workplaces. (Michelson, 2000) It is considered positive for quality of life if parents who pursue home-based work are *available* to their children, even if not always in face-to-face contact with them. It is for such gender-based aspects of quality of life that there is an intersection between home-based work and such approaches to quality of life as *work and family fit*, *work-life balance*, and *work-life style* (Gurstein, 2001; Hennon, Loker & Walker, 2000; Phizacklea & Wolkowitz, 1995).

Although men's daily life patterns are not mutually exclusive to those of women, gender differences remain. When men pursue home-based work, a common objective is to gain the ability to work uninterrupted. Men are more likely to locate their workplace in remote locations in and around their homes, while women are more likely to pick locations from which they can monitor the comings, goings, and doings of other family members (Palm Linden, Wikstrom & Michelson, 1997; Wikstrom, Palm Linden & Michelson, 1998).

Motivations for implementing home-based work are not always with the employee. After some years of implementing home-based work arrangements, many employers have found, to their surprise, that home-based workers are often more productive than those in external workplaces, if only to justify their ability to continue doing so. Some employers have developed mandatory home-based work regimes in order to reduce the cost of providing workplaces and facilities (Gordon, 1988).

## Alternative Styles of Home-Based Work

All home-based work is not carried out the same way. Research indicates two distinct styles of home-based work. Intensive home-based work is mostly carried out at home, with a minimum of work-related travel. Extensive home-based work, while centered on work done at home, involves other work-related locations in the course of most workdays. Extensive home-based workers may also spend time at a central workplace location; others may work from home but call on consumers, suppliers, and/or commercial outlets as part of their workday. The intensive home-based workers log more hours of work. The extensive home-based workers spend more time traveling, and this brings them more into contact with other people, whether management or coworkers connected with their employer or others connected with their type of work. These styles address different aspects of quality of life: creativity and coping with complexity among the intensive home-based workers and variety and interpersonal networking among the extensive workers (Michelson, 2000; Michelson, Palm Linden, & Wikstrom, 1999).

## Growth of an Alternative to Centralized Workplaces

Regardless of the specific direction of home-based work, the growth of this phenomenon offers a degree of flexibility of a substantial alternative to traditional external workplace contexts. This has been greatly facilitated by the growing availability and sophistication of the personal computer and accompanying software and service provision, though the growth rate of home-based work has leveled off as personal computing at home became widespread.

For example, Statistics Canada's General Social surveys identify home-based work by asking, "Excluding overtime, do you usually work any of your scheduled hours at home?" Between 2000 and 2008, the percentage of home-based workers thus identified rose from about 17 % to 19 %. (Turcotte, 2010) Nonetheless, this research showed great differences in incidence of home-based work between employees and self-employed persons; among the latter, more than half fit the criteria for home-based work, and this has increased in the same time period from about 50 % to 60%. Among the employees, professionals are most likely to work at home, though this varies by industry.

Although women were said to account for earlier acceptance of home-based work, given the enhanced opportunity to juxtapose paid work with domestic and child care activities (Christensen, 1997; Huws, Korte, & Robinson, 1990), recent trends show that men have come to exceed women in percentage of those pursuing home-based work. As of 2008 Canadian findings, family-related reasons represent only about 9 % of main reasons given for working at home. In a quarter of cases, the workers had no choice in the matter, while in about 40 %, there were positive, rational reasons given for working at home (Turcotte, 2010).

## Cross-References

- ▶ Work-Family Fit
- ▶ Work-Life Balance
- ▶ Work-Life Harmony
- ▶ Workplace Flexibility
- ▶ Work-to-Family Conflict
- ▶ Work-Family Facilitation

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# Homeless and Hard-to-House Individuals, Quality of Life Measure (QoLHHI)

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## Synonyms

QoLHHI

## Definition

The Quality of Life for Homeless and Hard-to-House Individuals Inventory (QoLHHI; Hubley, Russell, Gadermann, & Palepu, 2009) is a self-report measure of subjective quality of life (SQoL) for homeless or vulnerably housed (HVH) individuals that is based on the World Health Organization's definition of quality of life.

## Description

### Overview

The QoLHHI is a self-report measure of SQoL for individuals who are homeless or vulnerably housed. This target population is quite diverse and includes everyone from single individuals to families; from youth to seniors; from physically and emotionally healthy individuals to those with severe mental health issues, physical disabilities, and addiction; and from those who are experiencing their first ever episode of ▶ homelessness to those who have been chronically homeless for many years or who come from multiple generations of homelessness or unstable housing (Hubley, Russell, Palepu, & Hwang, 2012; Palepu, Hubley, Russell, Gadermann, & Chinni, 2012).

The QoLHHI takes a domain-based approach to SQoL; that is, SQoL is assumed to be influenced by a person's experiences and circumstances across a range of different domains or life areas (Hubley et al., 2009). The QoLHHI modules cover a variety of life areas: health, health care system, place where you live or stay, living conditions, financial situation, employment situation, social and emotional support, recreational and leisure activities, spiritual life, romantic situation, family, and friends. Each life area is also evaluated using two different components: (1) Impact Survey and (2) MDT Scale. The Impact Survey gathers descriptive information about respondents' circumstances, asks respondents to evaluate the negative and positive impacts that various aspects of the life area have on them, and asks about the best and worst things about that life area. The MDT Scale asks respondents to rate their level of satisfaction with the life area, describe the state of the life area, and compare what they have to what they want, what others have, the best they have had in the past, what they expected to have by now, what they expect to have in the future, what would be ideal, what they deserve, and what they need. Given the wide range of individuals who are HVH and the variety of research, evaluation, and policy purposes for which this inventory can be used, the QoLHHI was designed to consist of modules that can be administered flexibly. That is, either or both of the Impact Survey and MDT Scale can be administered for some or all of the available life areas as needed.

The QoLHHI can be used in a variety of ways: (1) as a monitoring tool to aid communities, professional agencies, and policy makers in monitoring the current situation of individuals who are HVH or to track stability or change over time; (2) as a tool for group comparisons to compare the SQoL of HVH people across different sites or to compare different subgroups within a site; and (3) as a program evaluation tool to evaluate programs that are specifically targeted at improving the SQoL (and related outcomes) of people who are HVH (Hubley et al., 2009).

The QoLHHI is available for use free of charge for research, program evaluation, and service provision purposes. Copyright remains with the authors, so the instrument should not be altered, adapted, or translated without written permission. This restriction does not include selecting only some sections or items for the uses described above as this is an approved use of the QoLHHI. The QoLHHI can be obtained through the authors or online at http://educ.ubc.ca/faculty/hubley/qolhhi.html

### Development

The QoLHHI is based on the World Health Organization's definition of SQoL, which states that ▶ quality of life reflects "an individual's perceptions of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards, and concerns" (Williams, 2000, p. 13). Because the life circumstances and experiences of HVH individuals may be quite unique (Russell, Hubley, Gadermann, & Palepu, 2008), the content of the QoLHHI was guided by information provided by 140 HVH individuals between 15 and 73 years of age (mean age = 32 years, SD = 14.8 years; 69 % men) who took part in ▶ focus groups consisting of 3–8 individuals each to discuss what was relevant to their SQoL (Palepu et al., 2012; Russell, Hubley, & Palepu, 2005). Participants in the focus groups were recruited from cohort studies or service organizations involving HVH individuals in four Canadian cities (Montreal, Ottawa, Toronto, and Vancouver). One-on-one interviews were also conducted with 14 individuals working for agencies that provide services to HVH individuals in each of these cities (Russell et al., 2005). Six main content themes were identified: mental and physical health/health care (including addictions issues), living conditions, financial situation, employment situation, recreational/leisure activities, and relationships. In addition to these concrete influences on SQoL, both individuals who are HVH and service providers raised a number of themes that are less tangible, such as having choices and options in life (e.g., regarding food, work, housing), having self-respect and receiving respect from others (including issues of harassment and discrimination), stability, and having the same rights as other members of society. The themes that emerged from the focus groups and interviews as well as a review of the SQOL literature and related measures were used as the basis for the QoLHHI life areas and item content and phrasing (Russell, Hubley, et al., 2008).

The QoLHHI consists of modules for the following life areas: health, health care system, place where you live or stay, living conditions, financial situation, employment situation, social and emotional support, recreational and leisure activities, spiritual life, romantic situation, family, and friends (Hubley et al., 2009). Many of these life areas reflect domains included in other measures of SQoL (e.g., WHOQOL-100, ▶ Quality of Life Inventory) (Palepu et al., 2012). Each life area is also evaluated using two components: (1) Impact Survey and (2) MDT Scale.

There are up to three types of items used in the Impact Survey: (a) items soliciting basic descriptive information about the life area for the respondent, (b) items assessing the impact that aspects of the life area have on the respondent using a 7-point Likert-type ▶ response format ranging from 1 = large negative impact to 4 = no impact to 7 = large positive impact, and (c) open-ended items that ask about the best and worst things about the life area for the respondent. It is in the Impact Survey that aspects of SQoL related to the life areas that are more unique to HVH individuals (e.g., access and cleanliness of bathing facilities, stigma of being homeless, difficulties of being surrounded by addiction or mental illness) were incorporated (Palepu et al., 2012).

The MDT Scale for each life area is assessed using 10 items (Hubley et al., 2009). Most of these items are rated by the respondent using 7-point Likert-type response formats, except for two items that use 4-point Likert-type response formats. The MDT items are based on Michalos' (1985) ▶ Multiple Discrepancies Theory (MDT). According to MDT, net satisfaction (QoLHHI MDT item #1) is a function of perceived discrepancies between the current self (i.e., what one currently has) and (a) what other people have, (b) one's own past best, (c) what one expected to have at this point in life, (d) what one expects to have in five years, (e) one's ideal, and what one (f) deserves, (g) needs, and (h) wants (i.e., items 3 through 10). Item 2 is a self-report descriptive question about the life area that provides useful information but is not part of MDT theory.

## Administration

The QoLHHI was designed to be administered one-on-one in an interview format, with the person administering the QoLHHI reading the items out loud to the respondent and marking the responses on the QoLHHI forms (Hubley et al., 2009). Thus, the QoLHHI is not appropriate for group administration. Some modules of the QoLHHI ask about personal and potentially sensitive subjects, such as health, relationships, family, and finances. Therefore, interviews should be conducted in a setting that ensures sufficient privacy so that respondents can feel comfortable providing such information. Ideally, the respondent and the interviewer will both be seated at a table so that the MDT Response Booklet and Impact Response Card can be placed in front of the respondent. Some respondents may become fatigued if a large number of QoLHHI sections are administered in one sitting, so it is recommended that breaks are given between sections of the QoLHHI.

The MDT Response Booklet and Impact Response Card were designed to assist with the administration of the QoLHHI by providing a visual representation to accompany the response options, particularly for respondents who have low literacy skills (Hubley et al., 2009; Russell, Hubley, et al., 2008). The authors have also found that some respondents like using these materials because it makes the process of responding to the QoLHHI a less passive process. It is not necessary to use these tools, however. Some respondents may prefer to read the QoLHHI items along with the interviewer and provide their responses either verbally or by pointing directly to responses on the form.

## Scoring

The Impact Survey contains up to three types of items (Hubley et al., 2009). Items that ask basic information about the respondents' circumstances can be used as individual variables or summed to create total scores; they are primarily used for descriptive purposes. Items within a life area that ask the respondent to rate the impact (ranging from "large negative impact" to "large positive impact") can be summed and the average score across the items within a life area reported. Open-ended questions about the best and worst things about a life area as well as other feedback from the respondent can be summarized by themes and used for primarily descriptive purposes.

There are three ways that the MDT items can be scored: (1) items can be treated as individual variables using the raw score for that item; (2) the scores circled for an item can be summed across the life areas administered (e.g., satisfaction across health, financial situation, and employment situation), with the average across those life areas reported; and (3) the scores for five of the items (i.e., comparison to the best in past, expected now, deserved, need, and in 5 years) can be summed within a given life area, with the average across those items reported (Hubley et al., 2009).

## Psychometric Evidence

The QoLHHI is a new measure of SQoL; thus, little psychometric evidence has been reported on the Impact Survey or MDT Scale for different modules of the measure. The focus of past and current validation work has been on the Health and Living Conditions modules as these are currently being used in a nationally funded 5-year longitudinal study of Health and Housing in Transition in Canada (Hwang et al., 2011).

Some research has examined relationships between the QoLHHI MDT Scale for Health, SF-12 Physical and Mental Health Summary Scale scores (Ware, Kosinski, & Keller, 1996), and number of physical and mental health conditions in two samples of HVH individuals (55 % White, 30 % Aboriginal) with a mean age of 43 years (Gadermann, Hubley, Russell, & Palepu, 2012; Russell, Gadermann, Hubley, & Palepu, 2008). A 10-item version of the MDT Scale for Health was administered to 60 HVH individuals in Vancouver, Ottawa, and Toronto in 2007 whereas a shorter 6-item version of the scale was administered to 41 HVH individuals in Vancouver in 2008. The correlations between the MDT Health items and the SF-12 Summary Component Scores were mostly small to moderate in size. Correlations between MDT Health items and number of physical and mental health conditions were small and nonsignificant whereas the SF-12 Physical and Mental Summary Component scores were significantly correlated with the respective number of physical and mental health conditions. These results suggest that the QoLHHI MDT Scale for Health taps a related but different construct (e.g., quality of life related to health) from that measured by the SF-12 (i.e., functional aspects of health) and an unrelated construct to number of physical and mental health conditions.

Content validation research currently is being conducted on the Health and Living Conditions modules using subject matter experts (i.e., experts in homelessness), experiential experts (i.e., members of the target population), and practical experts (i.e., research assistants or service providers who would administer the measure) by Lara Russell for her doctoral dissertation at the University of British Columbia.

In addition, research has recently been conducted by a team led by Dr. Anita Hubley (University of British Columbia) that examines the factor structure, ▶ internal consistency reliability, convergent and discriminant validation evidence, and known-groups validation evidence for the QoLHHI Health and Living Conditions Impact and Overall MDT Satisfaction scales by gathering data from 240 HVH individuals recruited from sites in Vancouver, Calgary, and Ottawa and 50 stably housed individuals from the general community in Vancouver. A subset of 75 HVH individuals were asked to return one week later to take part in a second session to provide ▶ test-retest reliability estimates. These data currently are being analyzed and are not yet available.

## Discussion

The QoLHHI (Hubley et al., 2009) is a self-report measure of SQoL for HVH individuals, which is based on the World Health Organization's definition of quality of life. The QoLHHI consists of modules for health, health care system, place where you live or stay, living conditions, financial situation, employment situation, social and emotional support, recreational and leisure activities, spiritual life, romantic situation, family, and friends. Each module is evaluated using two components: (1) Impact Survey and (2) MDT Scale. Because the life circumstances and experiences of HVH individuals can be quite unique relative to the general population, information gathered in focus groups with HVH individuals between 15 and 73 years of age and interviews with service providers were used to inform the content and phrasing of the Impact Survey items. Use of this information for item development is a strength of this component of the QoLHHI. The MDT Scale is based on Michalos' (1985) Multiple Discrepancies Theory, which provides a strong theoretical basis for this component of the QoLHHI. The overall approach of measuring SQoL using the Impact Survey and MDT Scale is unique, and the QoLHHI appears to be a promising measure of SQoL for use with HVH individuals.

As a new measure of SQOL, the QoLHHI has little psychometric evidence at present to support the inferences made from its scores. The *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 1999) describes five sources of validation evidence: test content, response processes, internal structure, relations to other variables, and consequences of testing. Current research efforts address some of the evidence needed for test content, internal structure, and relations to other variables for the Health and Living Conditions modules. Future validation research needs to expand on this evidence as well as gather similar validation evidence for other modules of the QoLHHI.

## Cross-References

- ▶ Content Validity
- ▶ Convergent Validity
- ▶ Discriminant Validity
- ▶ Factor Analysis
- ▶ Focus Groups
- ▶ Homelessness
- ▶ Internal Consistency Reliability
- ▶ Known-Groups Validity
- ▶ Multiple Discrepancies Theory (MDT)
- ▶ Quality of Life (QOL)
- ▶ Response Format
- ▶ Test-Retest Reliability
- ▶ World Health Organization Quality of Life (WHOQOL) Assessment

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# Homeless People, Worst Cities for

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## Definition

The National Law Center on Homelessness and Poverty (NLCHP) is a US nonprofit organization that seeks to end homelessness through legal advocacy.

The Ten Meanest Cities are those cities identified by the NLCHP as being pronounced in their efforts to criminalize homelessness.

## Description

The National Law Center on Homelessness and Poverty (NLCHP) was established in 1989 by Maria Foscarinis, a lawyer involved in the area of homelessness since 1985 ("Do criminalization efforts work?," 2011). The organization focuses on the causes of homelessness and poverty by addressing legal and policy decisions that violate the rights of homeless persons. It serves as a resource for grass roots advocates, public interest and pro bono attorneys, policymakers, and homeless persons by providing information about the rights of persons who are homeless and the resources needed to resolve their circumstances (National Law Center on Homelessness and Poverty, 2009). It is governed by a Board of Directors that includes lawyers, community activists, researchers, and persons who were formerly homeless ("Do criminalization efforts work?," 2011). The NLCHP partners with major US law firms, and receives support from institutional and corporate foundations such as the U.S. Human Rights Fund and the W.K. Kellogg Foundation.

The NLCHP's strategy is to implement change through impact litigation (i.e., lawsuits intended to effect a specific result for a broad class of people as opposed to those that focus on a result unique to an individual), policy advocacy, and public education. At the citywide level, the NLCHP challenges local government's attempts to prohibit living in public places and prevent organizations from distributing food and clothing to persons who are homeless. Their lobbying efforts led to legislation that increased federal resources to prevent homelessness and house those who were already homeless (Homeless Emergency Assistance and Rapid Transition to Housing (HEARTH) Act), enacted unprecedented federal protection to tenants of foreclosure properties (Protect Tenants at Foreclosure Act), and created and developed the Federal Strategic Plan to Prevent and End Homelessness which was the first plan of its kind to address both housing and civil rights issues ("National Law Center on Homelessness and Poverty fact sheet," n.d.).

The "10 Meanest Cities" are those US cities identified as enacting aggressive policies that penalize persons who are homeless, such as laws that make it illegal for individuals to eat, sleep, and sit in public places. The NLCHP defined measures that criminalize homelessness as "laws that make it illegal to do things that people experiencing homelessness must do as a result of their homeless status or other measures that target homeless persons." ("National Law Center on Homelessness and Poverty," n.d.). They have successfully argued that anti-begging laws violate the First Amendment right to free speech, and that some anti-camping/sleeping measures violate the 8th Amendment right to be "free from cruel and unusual punishment if no shelter space is available for homeless persons to use" ("National Law Center on Homelessness and Poverty"). They further demonstrate that such laws exacerbate homelessness by moving persons away from services and resources, prevent persons from obtaining employment and housing, and overburden the criminal justice system ("National Law Center on Homelessness and Poverty").

The cities were ranked (number "1" being the city with the most egregious policies) based on one or more of the following criteria: the number of anti-homeless laws in the city, the enforcement of those laws and severity of penalties, the general political climate toward homeless people in the city, local advocate support for the meanest designation, the city's history of criminalization measures, and the existence of pending or recently enacted criminalization legislation in the city ("National Law Center on Homelessness and Poverty," n.d.).

1. Los Angeles, CA
2. St. Petersburg, FL
3. Orlando, FL
4. Atlanta, GA
5. Gainesville, FL
6. Kalamazoo, MI
7. San Francisco, CA
8. Honolulu, HI
9. Bradenton, FL
10. Berkeley, CA

The list was taken from a 2009 publication entitled "Homes Not Handcuffs: The Criminalization of Homelessness in U.S. Cities," a joint report by the NLCHP and the National Coalition for the Homeless (NCH) that tracked measures enacted from 2007 to 2008 ("National law center on homelessness and poverty," n.d.). It is the NLCHP's ninth report and the NCH's fifth report on the topic.

## Cross-References

- ▶ Homelessness
- ▶ Poverty

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## Homelessness

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### Synonyms

Rooflessness; Sleeping rough

### Definition

Homelessness is the ongoing condition of being without a home. Frequently, the term is applied to people who sleep rough (i.e., outdoors in an area they do not own or rent) and to people who reside in very short-term housing intended for people who are otherwise homeless. It can also be applied to people who have insecure housing (e.g., residing with a friend temporarily and having no prospect of more permanent housing; Toro, 2007). The term “homelessness” can also refer, especially in European usage, to those who have inadequate housing (e.g., Edgar, 2009). Research on homelessness has a long history (e.g., Anderson, 1923).

### Description

The *experience of homelessness* can significantly reduce an individual’s quality of life (Goodman, Saxe, & Harvey, 1991). People who are homeless tend to endure heat, cold, and wet more acutely than do people who have adequate housing. Additionally, housing insecurity and the conditions of temporary housing can provoke ▶ anxiety and anger. These factors alone could significantly reduce one’s quality of life.

However, possibly equally important, homelessness tends to co-occur with other variables that can diminish quality of life. The causal relations between these other problems and homelessness can be complex and open to debate, but nonetheless, the problems often co-occur. For instance, *(A) untreated mental illness, often depression or schizophrenia*, is common among people who are homeless, and this can strongly reduce quality of life. Prevalence estimates vary widely, but possibly 20–50 % of people who are homeless have a major ▶ mental illness, not including disorders related to ▶ substance abuse (Breakey et al. 1989; Fazel, Khosla, Doll, & Geddes, 2008; North, Smith, & Spitznagel, 1994; Vázquez, Muñoz, & Sanz, 1997). The general public may assume that schizophrenia predominates among people who are homeless, possibly because people who are homeless and victims of schizophrenia sometimes act out in noticeable ways; however, depression-related disorders probably have a similar or possibly higher prevalence among people who are homeless (Breakey et al. 1989; Vázquez, Muñoz, & Sanz, 1997). In some cases, the depression may have caused the homelessness by paralyzing initiative and thereby causing inability to pay rent or attend work or apply for social assistance. In other cases, the reverse may be true;the homelessness may provoke depression. *(B) Untreated abuse of alcohol and other substances* sometimes accompanies homelessness (Fazel et al. 2008), and this too can reduce quality of life. Again, the causal relationship is complex. Substance use can cause homelessness, but in other cases, the substance use may be a response to the hopelessness associated with homelessness. In still other cases, the substance use may be a form of self-medication for psychiatric symptoms, and this self-medication may be the cause of the homelessness (Yeater, Austin, Green, & Smith, 2010). Whatever the causal pattern, substance abuse often accompanies homelessness and reduces quality of life. Also, people who are homeless often experience a *(C) dearth of social support,* and this too can reduce quality of life (Bassuk, Rubin, & Lauriat, 1986; Shinn, 2007). In addition, *(D) unemployment and no immediate hope for employment* tend to co-occur with homelessness, and ▶ unemployment seems to produce long-lasting reductions in quality of life (Lucas, Clark, Georgellis, & Diener, 2004). Furthermore, *(E) experiences of violence* often accompany homelessness, and these too can reduce quality of life (e.g., Kipke, Simon, Montgomery, Unger, & Iversen, 1997; North, Smith, & Spitznagel, 1994). Also, *(F) other untreated medical conditions* are disturbingly frequent among people who are homeless, and these too can reduce quality of life (Breakey et al. 1989; Gelberg, Gallagher, Andersen, & Koegel, 1997; Van Laere, De Wit, & Klazinga, 2009). Early death tends to accompany homelessness, possibly in part due to these untreated medical conditions and possibly also because of the physical stress caused by homelessness (Hibbs et al. 1994; Hwang, 2000). Thus, homelessness itself tends to reduce quality of life, but possibly equally important, homelessness tends to co-occur (sometimes for complex reasons) with a host of other factors that also reduce quality of life.

Because a cluster of detrimental variables tend to be associated with homelessness, scholars and practitioners can legitimately debate the appropriate target of intervention for people who are homeless. Some evidence suggests that *(A) housing first approaches* (providing permanent housing with appropriate supports) may significantly increase quality of life for people who are homeless (Tsemberis, Gulcur, & Nakae, 2004; Pearson Montgomery, & Locke, 2009; Tsemberis & Eisenberg 2000; Busch-Geertsema, 2002) possibly especially for people experiencing psychosis (see discussion in Milby et al., 2010). Other programs, provide *(B) substance abuse interventions* (Milby et al. 2010) or provide *(C) assertive treatment of mental illness* (Lehman, Dixon, Kernan, DeForge, & Postrado, 1997). Cognitive behavioral therapy, for instance, has shown some potential to improve quality of life for homeless youth (Altena, Brilleslijper-Kater, & Wolf, 2010). Addressing the housing deficits, substance abuse, and mental illness in these ways can facilitate positive change. However, as adjuncts, interventions can also target the other associated detrimental variables. For example, provision of *(D) social support* and *(E) employment training* has potential (Milby et al. 2010). In a recent study, people who had escaped from homelessness were asked to report factors that facilitated the escape (Patterson & Tweed, 2009). A relatively frequent response was that they escaped homelessness after recognizing their own value and potential. Programs offering ► social support (e.g., drop-in centers) and short-term certificates facilitating employment (e.g., first aid or other certificates valuable for work but requiring only short periods of training) could potentially facilitate this type of positive self-realization for some people if these programs are well delivered. According to those in the Patterson and Tweed (2009) study, a sense that the self was capable and valuable facilitated exits from homelessness. Skill training can convey a sense that the provider believes the student has the ability to succeed. As an adjunct to the more basic interventions, this type of training intervention may have value for some people who are homeless (Milby et al. 2010).

Some interesting research suggests that cultural and/or economic context may influence the effects of homelessness. Biswas-Diener and Diener (2006) assessed ► life satisfaction among people residing on the streets of Calcutta. They also assessed life satisfaction among people who were homeless in the United States. In that comparison, the people who were homeless in the USA reported lower life satisfaction than those residing on the streets of Calcutta. One must be careful about generalizing from studies sampling only a few cultural contexts and for which some potential mediators were not assessed. Nonetheless, the research suggests that homelessness may have its greatest impact on life satisfaction among people who reside in more wealthy contexts. Seeing wealth around oneself may exacerbate the quality of life decrement experienced by people who are homeless. The effect is consistent with Wilkinson and Pickett's (2008) findings that greater income equality in society tends to be beneficial to many members of that society. They argue for policies that reduce the income differential between rich and poor and argue that this can be more effective than high investment in provision of government services. Shinn (2007) published a discussion of policies that may reduce homelessness, and she too discussed the role of policies increasing income equality in addition to other policy interventions.

## Cross-References

- ▶ Anxiety
- ▶ Life Satisfaction
- ▶ Mental Illness
- ▶ Poverty
- ▶ Social Support
- ▶ Substance Abuse
- ▶ Unemployment

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## Homeostasis

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### Synonyms

Core affect; Homeostatically protected mood; Well-being, subjective

### Definition

The term "homeostasis" was coined by Cannon (1932) who, at that time, was studying the physiological response to stress. His approach was greatly influenced by Claude Bernard's views of a flexibly stable *milieu interieur* (Bernard, 1878 cited by; Goldstein, 1995), and Cannon needed a term to refer to the way an array of separate physiological systems can work together to reestablish stability following perturbation. He therefore used the term homeostasis to describe the systematic, integrated response to emergency situations organized by the autonomic sympathetic nervous system. That is, in response to a perceived threat, the adrenal medulla releases the hormone epinephrine into the blood which, in turn, causes a coordinated response involving increased blood pressure, heart rate, blood glucose, etc. Indeed, every physiological variable that needs to be maintained within a narrow range for normal functioning is managed by a homeostatic system. Other examples are the maintenance of body temperature and the concentration of carbon dioxide in the blood.

### Description

The theory of subjective well-being homeostasis proposes that, in a manner analogous to the homeostatic maintenance of physiological variables, subjective well-being is also actively controlled and maintained (Cummins & Nistico, 2002, for an extended description). SWB homeostasis attempts to maintain a normal positive sense of well-being that comprises a generalized and rather abstract view of the self. It is exemplified by a response to the classic question "How satisfied are you with your life as a whole?" Given the extraordinary generality of this question, the response that people give does not represent a cognitive evaluation of their life. Rather it reflects a deep and stable positive mood state that we used to call Core Affect (Davern, Cummins, & Stokes, 2007) but now refer to as Homeostatically Protected Mood (HPMood: Cummins, 2010).

HPMood is dominated by a sense of contentment flavored with a touch of happiness and excitement. It is this general and abstract state of subjective well-being which the homeostatic system seeks to defend. As one consequence, the level of satisfaction people record to this question has the following characteristics:

1. It is normally very stable. While unusually good or bad events will cause it to change in the short term, over a period of time, homeostasis will normally return SWB to its previous level (see Hanestad & Albrektsen, 1992; Headey & Wearing, 1989).
2. Each person has a level of HPMood that is set genetically. This "set point" for SWB lies in the "satisfied" sector of the dissatisfied-satisfied continuum. That is, on a scale where zero represents complete dissatisfaction with life and 100 represents complete satisfaction, people's set point normally lies within the positive sector of the scale (see Cummins, Gullone, & Lau, 2002).

3. At a population level within Western nations, the average set point is 75. In other words, on average, people feel that their general satisfaction with life is about three-quarters of its maximum extent (Cummins, 1995, 1998).

While this generalized sense of well-being is held positive with remarkable tenacity, it is not immutable. A sufficiently adverse environment can defeat the homeostatic system, and when this occurs, the level of subjective well-being falls below its homeostatic range. For example, people who experience strong, chronic pain from arthritis or from the stress of caring for a severely disabled family member at home have low levels of subjective well-being (Cummins, 2001). However, for people who are maintaining a normally functioning homeostatic system, their levels of SWB will show little relationship to the daily events in their lives. So, how do homeostatic processes defend SWB against the unusually good and the unusually bad experiences of life? The answer proposed is that there are three levels of defense, and we call these defensive systems "buffers." The first buffer is provided by behavior, the second is a set of buffers that are external to the person, while the third set of buffers are internal.

## Homeostatic Buffers

Interaction with the environment constantly threatens to move well-being up or down in sympathy with momentary positive and negative experience. And to some extent, this does occur. However, most people are adept at avoiding strong challenges through the maintenance of established life routines that make their daily experiences predictable and manageable. Under such ordinary life conditions, the level of their mood state varies by perhaps 10 percentage points or so from one moment to the next, and this is the set point range. Homeostasis works hardest at the edges of this range to prevent more drastic mood changes which, of course, do occur from time to time. Strong and unexpected positive or negative experience will shift the sense of personal well-being to abnormally higher or lower values, usually for a brief period of time, until adaptation occurs. However, if the negative experience is sufficiently strong and sustained, homeostasis will lack the power to restore equilibrium, and SWB will remain below its set point range. Such homeostatic defeat is marked by a sustained loss of positive mood and a high risk of depression.

So the first line of defense against homeostatic challenge is to avoid, or at least rapidly disengage from, negative environmental interactions. The second line of defense involves the external buffers.

## External Buffers

The two most powerful external buffers are close relationships and money. Of these two, the most powerful buffer is a relationship with another human being that involves mutual sharing of intimacies and support (Cummins, Walter, & Woerner, 2007). Almost universally, the research literature attests to the power of such relationships to moderate the influence of potential stressors on SWB (for a review see Sarason, Sarason, & Pierce, 1990).

Money is also a very important external buffer, but there are misconceptions as to what money can and cannot do in relation to personal well-being. For example, it cannot shift the set point to create a perpetually happier person. Set points for SWB are proposed to be under genetic control (Cummins, Eckersley, Pallant, Van Vugt, & Misajon, 2003), so in this sense, money cannot buy happiness. No matter how rich someone is, their average level of SWB cannot be sustained higher than a level that lies toward the top of their set point range. People adapt readily to luxurious living standards, so genetics trumps wealth after a certain level of income has been achieved.

While this opinion flies in the face of those positive psychologists who believe that people can be made endlessly happier, it is support by the findings of a recent report. Cummins et al. (2007) studied the cumulative data from the Australian Unity Well-being Index which comprised SWB data from about 30,000 Australians. The purpose of the analysis was to determine the demographic groups with the highest and the lowest well-being. It is reported that the maximum average subgroup score is 81–82 points. Thus, this seems to be the maximum SWB that can be maintained as a group average even for people who have close relationships and plenty of money.

The true power of wealth is to protect well-being through its capacity to be used as a highly flexible resource (Cummins, 2000) that allows people to defend themselves against the negative potential inherent within their environment. Wealthy people pay others to perform tasks they do not wish to do themselves. Poor people, who lack such resources, must fend for themselves to a much greater extent. Poor people, therefore, have a level of SWB that is far more at the mercy of their environment.

### Internal Buffers

When people fail to control their external environment and SWB is threatened, their internal buffers come into play. These comprise protective cognitive devices that are designed to minimize the impact of personal failure on our positive feelings about our self. There are many such devices, collectively called secondary control techniques (Rothbaum, Weisz, & Snyder, 1982), and a detailed discussion of these systems in relation to SWB is provided in Cummins and Nistico (2002) and Cummins et al. (2002). They have the role of protecting our SWB against the conscious reality of life. They do this by altering the way people see themselves in relation to a challenging agent such that the negative potential in the challenge is deflected away from the core view of self. So the role of these buffers is mainly to minimize the impact of personal failure. The ways of thinking that can achieve this are highly varied. For example, one can find meaning in the event ("God is testing me"), fail to take responsibility for the failure ("it was not my fault"), or regard the failure [dropping a vase] as unimportant ("I did not need that old vase anyway").

In summary, the combined influences of adaptive behavior, together with the external and internal buffers, ensure that our well-being is robustly defended. There is, therefore, considerable stability in the SWB of populations, and as has been stated, the population mean for Western societies like Australia is consistently at around 75 points on a 0 to 100 scale.

## Cross-References

- ▶ Australian Unity Well-being Index
- ▶ International Well-being Group
- ▶ Personal Well-being Index
- ▶ Subjective Well-being

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## Homeostatically Protected Mood

- ► Core Affect
- ► Homeostasis

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## Homer

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### Birth, Education, Work History, and Main Contributions

Among the writers of the Archaic Age (c. 750–480 BCE), questions about the best life for an individual or about the best kind of person to be had paramount importance. The heroes of the epic poems ascribed to Homer (eighth century BCE), the Iliad and the Odyssey, were larger than life characters, born to and raised in privileged, noble, and wealthy families, occasionally boasting gods or goddesses in their family trees, displaying physical attractiveness and dexterity, as well as the qualities of practically wise leadership, strength of character, courage, ► justice, generosity, and piety. The best kind of people were aristocrats and the best kind of life was aristocratic. Enjoying all the advantages of nobility, such people would have a clear sense of noblesse oblige and act accordingly. According to McKirahan, changes in Greek society from the beginning to the end of the Archaic Age brought changes in people's vision of a ► good life from that of competitive to cooperative success:

> . . . the various strands of the Homeric heroic ideal began to unravel. In particular, good birth, wealth, and fighting ability no longer automatically went together. This sort of situation forced the issue: what are the best qualities we can possess? What constitutes human ARETE [i.e., excellence, virtue or goodness]? The literary sources contain conflicting claims about the best life for a person, the best kind of person to be, and the relative merits of qualities thought to be ingredients of human happiness. (McKirahan, 1994, p.358)

A notable conflict may be found in Homer's two classics. There is a major contrast to be found there between the characters of Odysseus and Achilles (the main figures of the Odyssey and the Iliad, respectively). Homer seemingly puts them both forward as role models, but they clash. Achilles is straight and true, noble and honest, but he is weak-willed and ruled by his passions, giving rise to tragic action that destroys his friends and eventually himself. Hence, he is a tragic figure. Odysseus is wily and clever, but morally unprincipled; he thinks nothing of lying, cheating, and manipulating others for his ends. He is always working on schemes to trick people. Nonetheless, he succeeds in all things, including his arrival home and reunification with his long-suffering wife and child. So he is a comic figure. In contrast to Achilles, he has a happy ending. Homer portrays them both in entirely positive terms, leaving us to puzzle out who we think is best, if either, and why. Definitely, Odysseus would seem to be "happiest." The pathetic scene between Achilles and Priam, the father of dead Hector, over Hector's corpse in Bk XXIV of Iliad has been called the pattern for subsequent tragic visions in Greek poetry. ► Plato calls Homer the father of tragedy. It is important to note that while the characters and the general background story that Homer is working with was inherited from centuries before (composed in a much more straightforwardly aristocratic time), Homer himself is writing from within the flux that McKirahan describes as the slide to more democratic values.

Granting that there was a variety of conflicting claims from a variety of "literary sources," there was also a relatively common central core of ideas about a good life and a good person that persisted from the eighth century BCE to the fourth century BCE, a core that may be discerned even today.

## Cross-References

▶ Hesiod

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# Homeworking

▶ Home-Based Work

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# Homogeneity, Urban

▶ Urban Isobenefit Lines

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# Homonegativity

▶ Homophobia and Transphobia

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# Homophobia and Transphobia

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## Synonyms

Heteronormativity; Heterosexism; Homonegativity; Sexual-prejudice; Transprejudice

## Definition

*Homophobia* and *transphobia* are two terms that refer to negative attitudes toward homosexual and transsexual people, although these expressions may spark the idea of an irrational fear (*fobos*) of homosexual and gender-nonconforming people. These terms are related to a wide range of conditions of negative attitudes and behavior toward lesbian, gay, bisexual, and transgender (LGBT) people, "ranging from casual use of pejorative language to aggressive personal attack" (Taylor & Peter, 2011, p. 277). This phenomenon thus involves different aspects: psychological, behavioral, cultural, social, and moral components (Rollè, Garbarini, Gerino, Marino, & Brustia, 2010).

Thus, homophobia and transphobia are both phenomena directed against people who challenge the sexual stereotypes commonly accepted by society: In fact, Herek (2004) proposed the use of the expression *sexual* ▶ prejudice, which refers to prejudicial attitudes toward LGBT people.

## Description

The European Union Agency for Fundamental Rights (European Union Agency for Fundamental Rights [FRA], 2009) reported that LGBT persons experience harassment, bullying, and discrimination, facing violent physical attacks in some cases, and that the majority of victims of homophobic crime do not complain to the police, as these acts lead LGBT people to use invisibility as a strategy to survive. Homophobia and transphobia concern most aspects of social life, including political asylum research, access to health care, and the context of sports and education.

Homophobic discrimination is also present in the workplace, but due to the invisibility of many LGBT identities, it is difficult to have homogeneous and comparable data regarding the prevalence of homophobia and transphobia in the workplace. We know that the number of aggressions in the workplace as well as in the family context is underestimated. As far as the educational context is concerned, the consequences of homophobic and transphobic acts on LGBT youth are crucial, as they affect both these individuals' school performance (marginalization could, in the end, increase the risk of dropout) and their global well-being (FRA, 2009).

Transgender youth aged 15–21 who participated in focus groups as part of a study by Grossman and D'Augelli (2006) reported that they were afraid of discrimination also within the health services. This often led them to avoid using those services due to the negative attitudes they found in their experiences with these services. For example, people who treated them only considered their non-stereotypical sexual identity and thus forgot their global being and needs. In addition, some providers asserted that they could *fix* them. Particularly for transgender people, the media in some cases showed images ridiculing them, reflecting a scarce knowledge of transgender people's lives.

Nadal, Skolnik, and Wong (2012) identified 12 categories of microaggressions, which characterize the daily life of transgender individuals and are closely connected to different forms of transphobia:

> (a) use of transphobic and/or incorrectly gendered terminology, (b) assumption of universal transgender experience, (c) exoticization, (d) discomfort/disapproval of transgender experience, (e) endorsement of gender normative and binary culture or behaviors, (f) denial of existence of transphobia, (g) assumption of sexual pathology/abnormality, (h) physical threat or harassment, (i) denial of individual transphobia, (j) denial of bodily privacy, (k) familial microaggressions, and (l) systemic and environmental microaggressions. (p.55)

Another important issue related to homophobia and transphobia is the intersection of multiple discriminations: In fact, a minority condition such as disability, ethnicity, religion, or old age may be combined with LGBT identity. An LGBT person belonging to an ethnic minority group, for example, risks discrimination on the grounds of sexual orientation or gender identity within his/her ethnic community and vice versa (FRA, 2009). This will lead to a higher social isolation. As explained in the definition section, homophobia and transphobia also consist of prejudices about LGBT people, such as assuming they are not normal or being afraid that they could transmit their sexual orientation or gender identity to children as well. These prejudices culminate with the idea that LGBT status, particularly homosexuality, is coupled with pedophilia.

As seen in the different categories of microaggression identified for transphobia by Nadal et al. (2012), homophobia also manifests itself at four different levels – each of them with precise features, but interrelated: *personal homophobia*, *interpersonal homophobia*, *institutional homophobia*, and *cultural homophobia* (Blumefeld, 1992). Personal homophobia is prejudice about LGBT people, including the idea that they are mentally ill, unfortunate individuals who go against nature, immoral, and worse than heterosexuals. Interpersonal homophobia is the activation of the prejudice that acts on social relations, resulting in discrimination, exclusion, and so on. Institutional homophobia occurs when discrimination on the basis of sexual orientation is enacted at an institutional level, for example, by government, business, educational and religious institutions, or professional organizations. In some cases, discrimination is institutionalized through laws or policies. Cultural homophobia (also called *collective* or *societal homophobia*) is represented by the number of non-written social norms and codes of behavior that legitimize discrimination, for example, by banning figures of LGBT people from history or by attributing negative features to them. These same levels of prejudices and negative attitudes may, of course, also be identified in relation to transphobia. FRA (2009) made reference to these levels.

### Homophobia and Transphobia According to the Minority Stress Model

Meyer proposed that stigmatization linked to the minority status causes a chronic stress in LGBT people: the *minority stress*. The stress experienced by LGBT people has particular characteristics, which bring with them critical consequences. The sexual minority status, in fact, leads to several distressing factors, including social exclusion, hatred cast, aggression, and family rejection. Meyer went beyond the conceptualization of this particular kind of stress, showing that it carries negative mental health outcomes in people who are subjected to it (1995).

Meyer assumed that minority stress involves three processes: (1) *internalized homophobia*, (2) *expectations of rejection and discrimination* that may be identified with the expression *perceived stigma*, and (3) *actual prejudice events*.

Internalized homophobia refers to the internalization of the negative attitudes toward homosexual people that occurs before LGBT persons recognize their sexual orientation: When they become aware of their homosexuality, at the same time, they apply the internalized negative attitudes to themselves, which will play a crucial role in the psychological adjustment of the person throughout life, especially in relation to self-esteem, disclosure, social relations, access to health care, depression, and many other important aspects. These self-directed negative attitudes usually peak during the coming-out process, but, as Meyer (1995) underlined, the worst thing is that even when the person has accepted his/her homosexuality, internalized homophobia will hardly decline significantly. Perceived stigma is related, too, to psychological well-being since, especially at high levels, it leads the person to keep a heightened vigilance, which is linked to an expectation of rejection and discrimination. This expectation will both increase the stress of the minority group member and push him/her to hide, becoming invisible. The actual prejudice events have the power of eliciting feelings of rejection, dread of violence, self-defiance, and degradation, which confirm both the internalized homophobia and the perceived stigma and have significant effects on the individual's global well-being. The minority stress model is particularly important not only because it offers a possible explanation for the mechanism that connects homophobia with mental health outcome but also because it introduced the concept of internalized homophobia.

Hendricks and Testa (2012) worked on an adaptation of the minority stress model concerning the experiences of gender-nonconforming people (Meyer, 1995). They reported many studies showing that the transgender population has experienced high levels of harassment and physical and sexual violence; other studies also showed that high percentages of gender-nonconforming people have been denied a job or fired because of their transgender status. These situations lead the person to experience a deep level of stress. This intensified experience of negative stress results in critical outcomes on global health: Many studies found higher rates of substance abuse, suicidal ideation, and suicide attempts among transgenders; moreover, transgender people who had been subjected to physical or sexual violence were more likely, compared with transgender individuals who had not experienced violence, to have attempted suicide as well as to have a history of alcohol abuse.

Meyer (1995) also identified protective factors such as connectedness to the LGBT community, social support, and a specific coping of the minority group – the *group coping*. Hendricks and Testa (2012) specified how identification with the minority group and a sense of membership may foster the development of coping strategies, which can be considered a resilience effect. This resilience effect can be an indicator for possible interventions of ▶ health promotion in this population, since rejection by family members, friends, or coworkers who do not accept the LGBT status may cause loneliness, diminish the sense of belonging to one's own community, and increase the sense of isolation.

## Consequences of Homophobia and Transphobia

After the development of the minority stress model, the studies on homophobia and transphobia increasingly focused on the outcome on the well-being of LGBT people. The FRA (2009) reported that the fear of discrimination may lead LGBT patients to avoid seeking care, and evidence exists that experience with this kind of discrimination correlates with a general poorer mental and physical health status.

As far as psychological health is concerned, Scourfield, Roen, and McDermott (2008) showed that LGBT young people have to learn to live with ambivalence, dealing with a dissonance between, on one side, their desire to be *out and proud* but, on the other side, the uneasiness of feeling that something in their sexuality does not match the social norms. This situation may result in a difficult process of building a healthy LGBT identity. Moreover, the authors also found that self-destructive behaviors (risky sex behavior, cutting, and suicide) may be common reaction to homophobia and transphobia in youth: In particular, they found a connection between LGBT identity and self-harm in the stories of the youth who participated in their study. The authors found that suicides among LGBT youth are, in a way, considered legitimate for three reasons: "isolation; homophobic reactions; and the impact of coming out on the family" (Scourfield et al., 2008, p. 334).

Iantaffi and Bockting (2011) – in order to test the relationship between a rigid dichotomous construct of gender, the level of internalized transphobia, and the psychological well-being – realized a survey that was completed by 1,229 transgender people. The results showed an association between the rigidity of gender beliefs and the levels of internalized transphobia; it also showed that lower levels of internalized transphobia are associated with higher levels of self-esteem.

In light of what we have shown up to this point, the distress caused by and the consequences of homophobia and transphobia are clear. Although these consequences are crucial at any age, adolescence and youth represent two particularly critical stages in which the person must face reactions toward his/her sexual orientation and gender identity. For this reason, it is important to focus on the reactions of young people to homophobia and transphobia as well as on the resilience factors. Scourfield et al. (2008) found that critical conflicts are experienced by LGBT youth also inside families and that resilience seems to be realized through three mechanisms: to relate oneself to an ideology of natural sexual diversity, to consider the resistance to discrimination as a possibility of becoming stronger, and to find safe places and people who can help them.

DiFulvio (2011) found an association between social connectedness and resilience in sexual minority youth. Social connectedness is defined as "the importance of belonging where youth perceive they are cared for and empowered within a given context" (DiFulvio, 2011, p. 1612). More specifically, the study showed that connectedness supported the affirmation of the personal identity, legitimizing and reinforcing the positive aspects of sexual identify through the sense of belonging and the support of significant.

In reference to transgender people, as Lombardi (2009) noted, the experience of discrimination changes according to variables such as age of transition, ethnicity, and social class; consequently, the impact of transphobic events on their lives may change according to these and other variables as well. Since transphobia experienced at school age may affect the education of transgender people (due to dropout), which will reverberate on these people's quality of life (occupation, income, etc.), it is necessary to investigate more carefully in this direction. This will help to highlight possible ways of limiting transphobia and its impact on transgenders' lives as well as promote resilience among this population.

## Measurement

In order to investigate the phenomena of homophobia and transphobia, researchers developed specific measures according to a specific theoretical construct.

As far as homophobia is concerned, certain scales measure social and internalized homophobia. Rye and Meaney (2010) examined the psychometric characteristics of the three most-used measures of homonegativity: the *Index of Homophobia*; the *Attitudes Toward Lesbians and Gay Men Scale*, developed by Herek; and the *Modern Homonegativity Scale*. The Index of Homophobia was designed to measure an irrational fear of and a discomfort toward homosexuality, hence focusing on the emotional aspects. When using this scale, one therefore has to consider that the more cognitive components of homonegativity are not specifically caught. In order to include more globally the different aspects of homophobia, Herek developed the *Attitudes Toward Lesbians and Gay Men Scale*, which also distinguishes between attitudes toward gay men and attitudes toward lesbians. Morrison and Morrison (cited by Rye & Meaney, 2010) proposed that attitudes are subject to change over time and that nowadays, people tend to express prejudice less explicitly than they did in the 1980s. Rather, negative attitudes are more indirect, so a measure of homophobia should aim to capture these more subtle components. For this reason, the authors developed the *Modern Homonegativity Scale*, which is specifically designed to make it possible for people to express homonegativity without worrying about showing overt prejudice against homosexuals.

Rye and Meaney (2010) found that although all three of the measures showed good psychometric properties, the *Modern Homonegativity Scale* presents more normally distributed data compared with the other two scales. Anyway, new studies should aim at providing measures detecting more implicit aspects of homonegativity.

Researchers also developed measures of internalized homophobia. As reported by Newcomb and Mustanski (2010), some of the most-used measures include the *Short Internalized Homonegativity Scale*, the *Internalized Homonegativity Inventory*, and the *Nungesser Homosexual Attitudes Instrument*, which, although designed earlier than the other two, is still the most-used scale. However, the use of these measures is debated today for several reasons, among which is the fact that they are used also for lesbians even if they have not been developed for women (Newcomb & Mustanski, 2010).

As far as transphobia is concerned, Hill and Willoughby (2005) developed the *Genderism and Transphobia Scale*, aimed at measuring transphobic attitudes and acts toward transgender people along with genderism. Nagoshi et al. (2008) designed the *Transphobia Scale*, precisely aimed at estimating the degree of discomfort a person feels when coming into contact with gender-nonconforming people.

### Future Research Needs

In the light of what has been reported, it would be advisable that future research aimed to deepen the knowledge about the relationship between minority stress and quality of life, with an approach of prevention and health promotion. With this perspective, it would be important to focus, taking into consideration also the intersection of multiple minority identities, on protective factors, resilience, and specific programs aimed at promoting global well-being.

## Cross-References

- ▶ Gender Discrimination
- ▶ Prejudice
- ▶ Sexual Orientation
- ▶ Sexual Orientation and Mental Health
- ▶ Social Support

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# Homoscedasticity

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## Definition

Homoscedasticity implies that the variances of the disturbance term within a regression model are equal among them. It is a basic assumption of the ordinary least squares regression model.

## Description

The homoscedasticity is a basic hypothesis of the model of regression relative to the terms of disturbance. It establishes that the variances of the terms of disturbance are equal among them. In consequence, the variance and covariance matrix of the terms of disturbance is diagonal. It is a necessary condition to guarantee the efficiency of the ordinary least squares (OLS) estimators, but it is not required for the OLS estimators to be unbiased, consistent, and asymptotically normal (Gujarati and Porter, 2009).

The breach of this hypothesis is called heteroscedasticity.

To verify the fulfilment of the hypothesis of homoscedasticity in the econometric literature, we can find several methods, among them the following ones: the Breusch-Pagan test (1979), the White test (1980), the Goldfeld-Quandt test (1965), and the Glejser test (1969), between others.

## Cross-References

- ▶ Bivariate Regression
- ▶ Heteroscedasticity
- ▶ Least Squares Regression Line
- ▶ Linear Regression Model
- ▶ Logistic Regression
- ▶ Multiple Regression
- ▶ Random Effects Regression for Panel Data
- ▶ Regression Coefficients

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# Homosexual

▶ Sexual Orientation

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# Homosexual Behavior and Orientation in England

▶ Same-Sex Behavior and Orientation in England

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# Homosexuality, Attitudes Toward

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## Synonyms

Attitudes; Attitudes toward homosexuality

## Definition

Attitudes toward homosexuality are ideas, feelings, views, beliefs, perceptions, and opinions about homosexuality, homosexual behavior, and homosexual people which are influenced by and arise out of received understandings and evaluations of homosexuality and homosexual behavior and result in reactions to and behavior toward homosexual people that have an impact on the ▶ quality of life, overall ▶ well-being, and ▶ health outcomes of homosexuals.

## Description

Attitudes toward homosexuality vary in intensity and positive or negative valence and may or may not result in behaviors or reactions toward homosexuals that range from acceptance to violent crime. Fishbein and Azjen (1975) and Azjen (1988) argue that attitudes impact behavior, that is, attitudes toward a group of people shape and affect behavior toward that group. Negative attitudes toward homosexuals become critical when they manifest in antigay behavior. Attitudes toward homosexuality are strongly influenced by what is considered “normal” in a society in terms of sexuality and gender and the gender roles to which women and men are expected to conform. A heteronormative society is one in which heterosexuality is considered to be the socially and culturally acceptable norm.

Individuals or groups of people who challenge heteronormative ideas of gender and sexuality by identifying as gay, lesbian, bisexual, transgender, or intersex are the subjects of sometimes quite negative responses and attitudes. Heterosexism is, according to Herek, Cogan, Gillis, & Glunt (1997, p. 17), "an ideological system that denies, denigrates and stigmatises any non-heterosexual form of behaviour, identity, relationship or community."

Attitude studies is a field of research within the discipline of social psychology. Attitudes toward homosexuality are influenced, shaped, and constructed by a number of individual and social factors, such as personal experience, religion, politics, culture, and tradition. Importantly, attitudes are not based only on ideas but on feelings (Potter, 1996). Heterosexual attitudes toward homosexuality can be discussed in terms of majority group attitudes toward stigmatized minority groups (Herek & Capitano, 1996). Among the correlates of heterosexual attitudes toward homosexuality are gender, level of ▶ education, geographic location, religiosity, population group, and political ideology and involvement. One of the most important correlates with attitudes toward homosexuality is personal interaction with a homosexual person or persons (see, e.g., Herek, 1991; Herek & Capitano, 1996). The attitudes of heterosexual and homosexual people toward homosexuality can be measured using validated scales (see, e.g., Larsen, Reed, & Hoffman, 1980; Williamson, 2000).

Negative attitudes toward homosexuality, and the personal and institutional prejudice to which these attitudes give rise, tend to have the most significant impact on the quality of life, general well-being, and health outcomes of homosexuals. Negative attitudes toward individuals based on ▶ sexual orientation and gender are often referred to as homophobia. The term was coined by American psychologist, George Weinberg; its use becoming widespread after the publication of his book *Society and the Healthy Homosexual* in 1972. The coining of the term was a milestone in the study of attitudes toward homosexuality, standing "a central assumption of heterosexual society on its head by locating the 'problem' of homosexuality not in homosexual people, but in heterosexuals who were intolerant of gay men and lesbians. It did so while questioning society's rules about gender, especially as they applied to males" (Herek, 2004, p. 9). Nevertheless, the persistent nature of negative attitudes toward homosexuality has resulted in homosexuals across the globe and throughout history experiencing varying levels of stigma and discrimination from various quarters.

The way in which the medical, legal, and religious sectors of society have responded and continue to respond to homosexuality reflect, mobilize, and are influenced by prevailing attitudes toward homosexuality at a given time. The responses of these three sectors of society are connected in important ways and have impacted on the quality of life of homosexuals in critical ways. Many religions have strong attitudes opposed toward homosexuality. Christianity, Judaism, and Islam, among others, condemn homosexuality as unnatural, immoral, and sinful. Religion, based on extracts from religious texts, is often used as both the reason and the justification for negative attitudes toward homosexuality. "Attitudes rooted in personal religious values typically reflect judgements about the morality of same-sex sexual relations" (Herek, 2000, p. 253). In recent years, however, a number of liberal religious groups have adopted more inclusive attitudes toward LGBTI individuals who wish to practice their faith or religion (see, e.g., http://www.gaychurch.org, http://www.glbtjews.org). Despite this gradual shift in attitudes in isolated cases, the influence of the pejorative view of homosexuality advocated by many religions, religious groups, and leaders on social and individual attitudes toward homosexuality continues to be far-reaching and forms the basis for stigma and discrimination against homosexuals in many parts of the world.

Religious teachings and a moral code based on these teachings which condemn homosexuality were, have been, and are incorporated into the legal frameworks of many countries.Homosexuality is illegal in a number of countries.

For example, homosexuality is outlawed in approximately 28 countries inAfrica. For a comprehensive list, please refer tothe website of the International Gay and Lesbian ▶ Human Rights Commission (http://www.iglhrc.org). Prevailing social attitudes allow legal systems that discriminate against homosexuals to persist. Burstein (1998 in Loftus, 2001) argues that governments pay attention to and action the opinions of their citizens; therefore, attitudes affect public policy (Loftus, 2001, p. 764). Importantly, in areas where homosexuality is still criminalized, homosexuals can be legally discriminated against and have little recourse when their rights are violated or they are the victims of antigay crimes. There has been progress in terms of securing the rights of homosexuals in a number of countries particularly in relation to decriminalization and inclusive jurisprudence related to what is known as gay marriage (See Reddy, 2009). In ▶ South Africa, for example, the rights of homosexuals are protected by the Constitution, and legislation is progressive in terms of recognizing same-sex marriage and parenting rights of homosexuals. This progress is in large part attributable to and the result of the activism of the "Gay Rights" movement(s) that arose and functions in response to stigma and discrimination as a manifestation of negative attitudes toward homosexuality. "The gay rights framework emphasizes the fact that lesbians and gay men (along with bisexuals and transgender individuals now constitute visible communities with cultural traditions, physical boundaries and political interests that are increasingly recognised by society at large. In other words gay men and lesbians comprise a discrete minority much like an ethnic group. The gay rights framework suggests a minority group attitudes paradigm for contemporary sexual prejudice. By this I mean that attitudes toward gay people are psychologically similar to majority attitudes toward racial, ethnic and other minority groups" (Herek, 2000, p. 2). However, even in areas where homosexuality is not illegal, where homosexuals are legally allowed to marry, adopt children, and enjoy equality in society in the eyes of the law, negative social attitudes persist. Where these attitudes translate into violence, the situation becomes particularly critical. The most famous case of attitude translating into murder is the case of Matthew Shephard who was tortured and murdered in Laramie, Wyoming in 1998 simply for being gay. This event brought international attention to how attitude can fuel hate crimes (Swigonski, Mama, & Ward, 2001). A shocking illustration of this in the African context is the rise in the incidence of rape of lesbians in South Africa (Mkhize, Bennett, Reddy, & Moletsane, 2010).

Staying in South Africa, Roberts and Reddy (2008) explore social attitudes toward homosexuality in South Africa using data derived from the South African Social Attitudes Survey (SASAS) from 2003 to 2007. They argue that despite the constitutional, legal and policy gains for homosexuals in South Africa, homosexuality and same sex relationships continue to be characterized as "un-African." "The assertion of 'un-Africanness' conceals a moral and cultural view that African societies are somehow unique and therefore immune to what is perceived to be a Western and European import" (Roberts & Reddy, 2008, pp. 9–10). Epprecht (1998) claims that during the colonial period in South Africa, European missionaries challenged and influenced conceptions of African sexualities while ignoring homosexual tendencies, which allowed for the development of the false notion that homosexuality is un-African and did not exist in African societies before the arrival of the West. Fixed notions of gender, masculinity, and femininity which exclude homosexuality continue to significantly impact attitudes toward homosexuality in South Africa and the quality of life and well-being of South African homosexuals. The SASAS data show that negative attitudes toward homosexuality continue to be widespread with "more than 80 % of the population aged 16 years and above express[ing] the view that sex between two men or two women could be considered 'always wrong' in each of the five survey years." The idea that homosexuality is un-African both justifies and intensifies the "othering" of homosexuals in South Africa and other African countries. In the case of many African countries, this "othering" is also fueled by the political and religious leadership of those countries (Reddy, 2002). In doing so, this conception may contribute to hate crimes perpetrated against homosexuals as these acts of violence and discrimination are seen as attempts to "protect" and "defend" traditional gender roles from the "threat" of homosexuality.

The response of the western medical model to homosexuality was, for some time (beginning in the nineteenth century), characterized by the pathologization of homosexuality. What this means is that homosexuality was considered to be a psychiatric or psychological illness or pathology which required treatment to correct. Homosexuality appeared as a diagnostic category in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) since the first edition in 1952 until it was removed in 1973. The removal of homosexuality from the DSM indicated a material change in the attitudes of medicine and behavioral sciences toward homosexuality. Notably, it can be argued that the shift from the religious view of homosexuality as a sin, and the legal view of it as criminal to the medical view of homosexuality as pathology, signaled a positive shift in attitudes toward homosexuality. This argument is underpinned by the idea that it is not as easy to blame and judge an ill person as it is a sinner or criminal (Duberman, Vicinus, & Chauncey, 1989). However, the impact of the belief that homosexuals are mentally ill, sinners, or criminals on the self-perception of homosexuals and how they are perceived by others and on the basis of which they are stigmatized and discriminated against cannot be underestimated.

While in some parts of the world, homosexuals have gained acceptance among certain groups, signaling that attitudes toward homosexuality are becoming more positive in some areas; homosexuals continue to face widespread hostility and antigay attitudes. According to Meyer (1995, p. 38), "[l]ike members of other minority groups, gay men, and lesbians must contend with negative societal attitudes and stigma." The effects of this social environment impact heavily on the psychological and physical health of homosexuals and their quality of life. Negative events related to stigma and discrimination, also known as prejudice events (Meyer, 1995), such as rejection by friends, family, and society as a whole, and antigay violence as well as expectations of prejudice events lead to high levels of stress for many homosexuals. In addition to the stigma, prejudice, and homophobia directed at homosexuals or individuals perceived to be homosexuals, homophobia,or antigay feelings directed toward the self by homosexuals impact on the quality of life and well-being of homosexuals. Because of the strength of early socialization experience and continued exposure to antihomosexual attitudes, internalized homophobia remains an important factor for a gay person's psychological adjustment throughout life (Hetrick & Martin, 1984; Gonsiorek, 1988; Malyon, 1982).

"Internalised homophobia refers to the direction of societal negative attitudes towards the self. Long before they begin to realise their own homosexuality, homosexually-oriented people internalize societal anti-homophobic attitudes. When as adolescents or young adults they recognise same-sex attraction, they begin to question their presumed heterosexuality and apply the label 'homosexual' or 'gay' to themselves… As self-labeling begins, individuals also begin to apply negative attitudes to themselves and the psychologically injurious effects of societal homophobia take effect" (Meyer, 1995, p. 40). Higher levels of internalized homophobia are often associated with the following characteristics: expressing more traditional attitudes toward gender roles, feeling more intimidated by and less individuated from one's parents and feeling less comfortable about disclosing one's homosexual identity to others Kahn (1991). Williamson (2000) argues that internalized homophobia plays a role in the progression of illness and health-related decision-making processes. This can apply to both psychological and physical health and has a direct effect on the quality of life of homosexuals.

Using HIV and AIDS as an example is a useful way to illustrate how personal and institutional negative attitudes toward homosexuality, stigma, prejudice and discrimination, and internalized homophobia impact on the quality of life and health outcomes of homosexuals. When HIV was identified among a small group of gay men in San Francisco in the early 1980s, the stigma associated with being gay and the stigma associated with the virus compounded each other and affected and continues to affect where, how, and when homosexuals can and do access prevention, treatment and care for HIV, AIDS and other illnesses. Indeed, earlier on in the epidemic (and still today in some parts of the world), AIDS was referred to as a "gay disease" (Treichler, 1987), and was known as Gay-related immunodeficiency (GRID) in the early days. Negative attitudes of health-care providers to both HIV and AIDS and homosexuality, and the resulting stigma and discrimination experienced by homosexuals, significantly impacts on the health outcomes of homosexuals (Reddy, Sandfort, & Rispel, 2009).

Attitudes toward homosexuality continue to be dynamic. Negative attitudes, particularly those that manifest in destructive and violent behavior toward homosexuals and the continued criminalization of homosexuality indicate that attitudes toward homosexuality must continue to be a focus of research within the social sciences and humanities in order to contribute to improving the quality of life of homosexuals across the globe. The continued use of validated scales and large-scale attitude surveys can be useful tools for tracking and monitoring attitudes toward homosexuality.

## Cross-References

- ▶ Bisexual
- ▶ Education
- ▶ Human Rights
- ▶ Quality of Life
- ▶ Religion
- ▶ Sexual Orientation
- ▶ South Africa, Quality of Life

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## Homosexuality, Health Aspects

► Sexual Orientation and Mental Health

## Honeymoon-Is-Over Effect

► Marital Satisfaction Change over Newlywed Years

## Hong Kong Special Administrative Region

► Hong Kong, Quality of Life

## Hong Kong Sustainable Development Index

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### Definition

Hong Kong ► sustainable development index (HKSDI) is a meaningful indicator capable of effectively measuring and monitoring current progress on sustainable development for Hong Kong.

### Description

Many countries and regions have implemented policies to ensure or protect sustainable development. Hence, methods are needed to measure, monitor, and drive the progress toward sustainable development at both national and regional levels.

In 1996, the ► United Nations Commission on Sustainable Development (CSD) listed 134 indicators relevant to sustainable development to help countries monitor their development conditions and implement efficient policies to ensure the sustainable development at the national level (Division for Sustainable Development, 2001). From 1999 to 2000, some countries tried to test this indicator set and found that this CSD indicator set was too large to be easily managed. So the CSD revised the set, drastically reducing it into 58 indicators embedded in a policy-oriented framework of themes and 28 subthemes. Some countries developed their own indicator set based on the CSD indicators.

Barrios and Komoto (2006) proposed a sustainable development index (SDI) for the Philippines, in which the SDI was used to indicate the areas in which improvements were required so as to achieve a better and sustainable ▶ quality of life. Short (2008) investigated the methodologies and policies used in Rwanda to promote and ensure sustainable industrial development and examine the government's role in providing an appropriate sustainable development framework. The US Environmental Protection Agency (2008) reported the most reliable indicators currently available and demonstrated the importance of scientifically sound information to help people understand the state of the environment, identify areas of concern, and monitor progress.

Although SDIs at the national level are important, SDIs at the regional level are also needed, since indicators at the national level may mask the sustainable development performance at the regional level. Hence, SDIs at the regional level with indicators adaptable to the local condition are developed.

The organization ▶ Sustainable Seattle (1993) presented these indicators to alert the people of Seattle of the problems they faced and got them involved in finding solutions to those problems. Hoffman (2000) developed the root index as a measure of local sustainable development in New York City for the years 1990–1995. The index focused on the foundations of sustainable economic activities and factors that had long-term impacts, such as ▶ education, ▶ health, housing, infrastructure, environment, access to the legal economy, and equality of opportunity. Herrera-Ulloa et al. (2003) developed a regional-scale SDI for Baja California Sur (BCS) of ▶ Mexico, taking into consideration the social, environmental, economic, and institutional dimensions with 27 indicators.

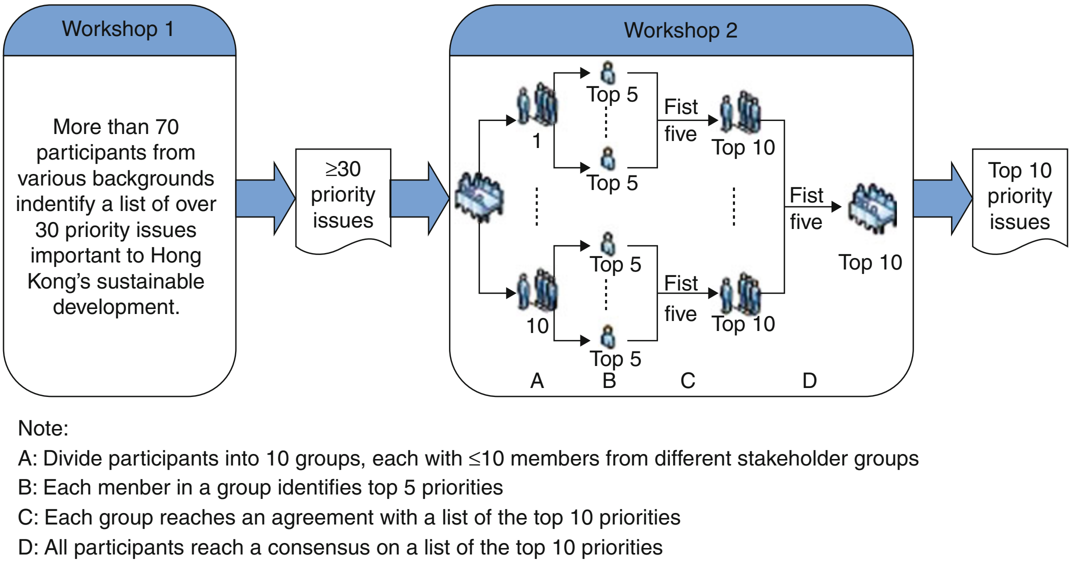
The city of Hong Kong, which is a special administrative region of China since 1997, has an increased awareness of the need for continuous growth and sustainable development. In 1999, the chief executive of Hong Kong stated in his policy address his aim of building Hong Kong into a world-class city. Robert and Hills (2002) discussed the sustainable development of Hong Kong and Scotland by considering the impact of changing circumstances. Hills (2002) discussed the recent evolution of environmental policy in Hong Kong, the emergence of a regional environmental management agenda, and the potential for ecological modernization. To get a clearer picture of areas to be improved, Hong Kong needs an effective way to measure its quality of life. For this reason, Tso, Yau and Yang (2011) designed and launched the HKSDI in 2003 based on 10 priority areas that represent a wide range of community concerns in relation to the local economy, the ▶ social progress, and the environment. More details are elaborated below.

## Locating Priority Areas

In order to reflect a wide range of economic, social, and environmental issues that are relevant to Hong Kong and track the public's view on Hong Kong's progress toward a more sustainable future, 10 priority areas were identified through multi-stakeholder engagement workshops. Participants were from a diverse group of stakeholders who represent a variety of sectors including business, government, environmental and social organizations, academics, and professionals.

As seen in Fig. 1, the first workshop was to identify a list of priority issues that were important to Hong Kong's sustainable development. It was conducted in 2001 involving over 70 participants interested in the topic. During the workshop, particular questions like "what are your priorities for a sustainable society in Hong Kong" and "how would you define them and what targets should Hong Kong achieve" were used to focus discussions on three topic areas of social, economic, and environmental ▶ sustainability. As a result, participants reached consensus, through interactive and facilitated discussions, on a list of over 30 priority issues.

The second workshop reviewed the identified priority issues and reached consensus on the



**Hong Kong Sustainable Development Index, Fig. 1** Method of determining the top 10 priority areas (Tso & Li, 2012)

top 10 priority areas for sustainable development in Hong Kong through debates. During the workshop, participants were divided into 10 small discussion groups, each comprising up to 10 members from different stakeholder groups and led by an independent facilitator. Individuals in each group reviewed the priorities from the previous workshop, selected their top five priorities, and shared with the group while the facilitator counted the votes of each priority. After discussing their rationales for why a priority should be on the list or not, each group member identified the top 10 priorities that he/she believed should be on the list. These results were shared within each group. Then, all participants reconvened to share their results and to discuss ways forward to reach a consensus as a larger group on the final list of top 10 priorities. As a result, criteria were suggested to filter the priorities, and a list of top 10 priorities emerged.

If an effective consensus was not attained on the list of top 10 priorities, no matter for the small group or for all participants, "fist five" tool was employed to show members' support for including or excluding particular priorities, e.g., five fingers indicate unwavering support and a fist indicates absolute disagreement with the way forward. Depending on the number of fingers shown, from none to five, the group could effectively gauge the level of support for an outcome and then discuss it until the group agreed on or accepted the outcome or decision.

At the end of the second workshop, the following 10 areas were determined to be the priority areas: caring and ethical employers, civil liberties and ► human rights, community spirit and ► well-being, educational system, environmental protection, health and hygiene, healthy economy, integration with mainland China, population policy, and ► urban planning.

### Collecting Data Through Surveys

Over 2,000 randomly sampled Hong Kong residents aged 18 or above were surveyed annually by telephone between July and September. Respondents were engaged in detailed conversations, usually lasting for 20–30 minutes, about issues that were critical to the sustainability of Hong Kong.

## Calculating the Index

The HKSDI is defined by a weighted average of satisfaction scores of the 10 pre-specified priority areas. It has a range between 0 and 100. The relative levels of importance of the 10 priority areas were used as weights. The importance levels of the 10 priority areas were first normalized into a percentage distribution, so as to produce a summed total of one. In particular, the computational formula of HKSDI is given by

$$\mathrm{HKSDI} = \frac{\sum_{i=1}^{10} \overline{W}_{i1}\,\overline{P}_{i1}}{\sum_{i=1}^{10} \overline{W}_{i0}\,\overline{P}_{i0}} * 100$$

$$\overline{W}_i = \frac{1}{n}\sum_{j=1}^{n} W_{ij}$$

$$\overline{P}_i = \frac{1}{n}\sum_{j=1}^{n} P_{ij}$$

where n is the sample size, $W_{ij}$ is the level of importance for priority area i provided by respondent j, $P_{ij}$ is the satisfaction level for priority area i provided by respondent j, $\overline{W}_{i1}$ and $\overline{P}_{i1}$ are the average importance level and satisfaction level, respectively, for priority area i of the current year, $\overline{W}_{i0}$ and $\overline{P}_{i0}$ are the average importance level and satisfaction level, respectively, for priority area i of the base year 2003.

## Discussion

The construction of HKSDI can reflect a wide range of economic, social, and environmental issues that are relevant to Hong Kong and track the public's view on Hong Kong's progress toward a more sustainable future. It can also be used to assess the importance of sustainable development priority areas within the Hong Kong community, to determine what sustainable development priority areas mean to the community, to track community perceptions on the importance of sustainable development priority areas and the progress in managing these areas, and to raise awareness of the important role of the priority areas in furthering sustainable development.

The framework of HKSDI can also be popularized and applied to other concerned regions to help them to construct their own sustainable indices.

## Cross-References

- ▶ Social Progress
- ▶ Social Sustainability
- ▶ Sustainability

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# Hong Kong, Quality of Life

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## Synonyms

Hong Kong special administrative region; PRC

## Definition

Hong Kong is a city in the South Eastern coast of the People's Republic China (PRC). Before 1997, it was a colony of the United Kingdom. After July 1, 1997, the People's Republic of China resumed sovereignty over Hong Kong, making the latter a special administrative region of the former.

## Description

There are three major quality of life research programs in Hong Kong involving the collection of trend data over time (Shek, in press). They are the Indicators of Social Development project, Social Development Index (SDI) project, and the CUHK Hong Kong Quality of Life Index project.

### The Indicators of Social Development Project

The Indicators of Social Development project has been undertaken by The Chinese University of Hong Kong, The Hong Kong Polytechnic University, and The University of Hong Kong with the aim to chart the quality of life and social well-being of the Hong Kong people before and after 1997. To achieve this objective, a total of nine social indicators surveys were conducted (e.g., Lau, Lee, Wan, & Wong, 1991, 2001, 2003, 2005; Leung, Wan, & Wong, 2008). These surveys focused more on subjective experiences quality of life including perceptions, values, feelings, and aspirations of the people, which form the core component of the surveys. Using mainly a 5-point scale ("Very Dissatisfied," "Dissatisfied," "Average," "Satisfied," and "Very satisfied"), questions with reference to 20 life domains covering nine personal life aspects (family life, education attainment, health status, financial situation, job, relationships with friends, relationships with relatives, living environments, and leisure time) and 11 societal conditions (economic situation, public order, general political situation, performance of the Hong Kong Government, transport, housing, medical services, education, social welfare, employment situation, and recreation facilities) were asked. Finally, a question assessing the respondent's global satisfaction with life and a question on the most important ingredient for a happy life (health, peace of mind, money, having filial children, freedom, love, marriage and family, career, material enjoyment, serving society, and others) were included. Besides questions on the respondents' satisfaction with different aspects of life, other questions are also covered in the core component of the Indicators of Social Development project, such as degree of satisfaction with the mass media, expectation of the quality of life 3 years later, subjective evaluation of the performance of the Hong Kong Government, and perceived severity of the social problems in Hong Kong and the perceived urgency in tackling each of these problems.

In addition to the core module, some individual modules measuring social and political issues which receive great attention during the time of survey are included, such as Hong Kong-mainland relations, information technology, political attitudes and welfare attitudes, and legal culture and retirement planning. In the latest report on the Indicators of Social Development (Leung et al., 2008), several observations were highlighted. First, it was observed people were less optimistic about their future and felt an increasing sense of downward mobility irrespective of the economic cycle. Second, throughout the years, the participants perceived good health to be the most important ingredients for a happy life, whereas family, marriage, love, or other material satisfaction was seen to be less important. Third, people's trust in government went up and down during the past decade or two and varied with people's reaction to different issues. This indicated government's performance received much attention from the public, whose political aspiration for democracy increased continuously.

### Social Development Index (SDI)

The Social Development Index (SDI) was developed by the Hong Kong Council of Social Service utilizing objective quality of life indices with the professional assistance of Richard Estes (Estes, 2005; The Hong Kong Council of Social Service, 2000). The purposes are mainly (1) to assess the changing social, political, and economic needs of the HKSAR over time; (2) to analyze Hong Kong's positive and negative development trends since 1981; and (3) to assess the quality of life in the "historically vulnerable population groups" of Hong Kong, including women, old people, children, youth, and low-income households. To date, six reports for the SDI (SDI for 2000, SDI 2002, SDI 2004, SDI 2006, SDI 2008, and SDI 2010) have been released.

The SDI covers information on 14 sectors (i.e., 14 subindexes) involving 47 indicators: Strength of civil subindex (4 indicators), political participation subindex (3 indicators), internationalization subindex (3 indicators), economic subindex (3 indicators), environmental quality subindex (4 indicators), arts and entertainment subindex (4 indicators), sports and recreation subindex (3 indicators), science and technology subindex (2 indicators), education subindex (3 indicators), health subindex (6 indicators), personal safety subindex (3 indicators), housing subindex (2 indicators), crime and public safety subindex (4 indicators), and family solidarity subindex (3 indicators). Besides, SDI has 5 population specific subindexes for the "historically vulnerable population groups" in Hong Kong: women's status subindex (5 indicators), low-income subindex (5 indicators), child status subindex (7 indicators), youth status subindex (7 indicators), and elderly status subindex (7 indicators).

To address the public concern about the lack of measures about the rule of law in Hong Kong, the Hong Kong Council of Social Service has set up an expert panel to develop an additional rule of law subindex using both quantitative and qualitative data. For the quantitative data, legal statistics such as number of judicial review cases and number of judges per 1,000,000 persons were used. For the subjective perception data, data on the respondents' perceptions of the rule of law (e.g., ratings by citizens on the impartiality of the court in Hong Kong) were collected by the Public Opinion Program of the University of Hong Kong. Two groups of experts (personnel in the legal process and law-related organizations) were invited to weight the indicators for the rule of law. According to The Hong Kong Council of Social Service (2005), the value of the rule of law subindex (75 points out of 100) could be regarded to be on the high side in Hong Kong.

In the latest release of the SDI report (SDI-2010), several major observations can be highlighted. (The Hong Kong Council of Social Service, 2011) First, there has been a steady increase in social development in Hong Kong. Second, with reference to 1986–1996 as the base years, positive changes in social development were found in different areas in 2008, except family solidarity. Third, family solidarity subindex had been dropping continuously and always had a negative development since its first release. Finally, children developed the worst among all population groups covered, followed by low-income groups.

### The CUHK Hong Kong Quality of Life Index

The CUHK Hong Kong Quality of Life Index uses both objective and subjective measures. According to Chan, Kwan, and Shek (2005), the objectives of the CUHK Hong Kong Quality of Life Index are to (1) measure and monitor the quality of life in Hong Kong in the twenty-first century, (2) engage relevant parties in promoting the quality of life in Hong Kong, (3) provide policymakers and the community with useful statistics on the quality of life in Hong Kong, and (4) draw public attention to the issue of quality of life.

There are three subindexes (sociocultural subindex, economic subindex, and environmental subindex) including 21 indicators in the CUHK Hong Kong QOL Index. The sociocultural subindex includes 10 indicators, such as public expenditure on health as a proportion of the GDP. For the economic subindex, there are 7 indicators covering such things as housing affordability ratio (annual average of affordable property prices). Finally, the environmental subindex (4 indicators) comprises measures such as air index and water index.

For each subindex, a composite QOL score is computed. By summing the QOL scores in these three subindexes, a QOL composite index is derived. Taking the year of 2002 as the base year of the study (score = 100), an index of a year above 100 means that the quality of life in Hong Kong in that year is better than that in 2002 and vice versa. Among the three subgroups, the sociocultural subindex bears the heaviest weight in the composite index, while the environmental subindex carries the lightest.

Among the 21 indicators, six are compiled by the Faculty of Social Science of The Chinese University of Hong Kong. They include the stress index, the general life satisfaction index, the press freedom index, the press criticism index, the government performance index, and the index of current economic conditions. These six indices are measures of individuals' subjective feelings. Among them, four indices of the CUHK QOL Index (stress, press freedom, government performance, and general life satisfaction) are based on survey data conducted by the Faculty of Social Science, CUHK involving adults aged 18 and above, and the data were collected through telephone interviews (computer-assisted telephone interviews) using structured questionnaires. The related data were collected from probability samples of Hong Kong residents. The data on the remaining 15 indicators are obtained from public sources, which include the annual reports of the HKSAR Census and Statistics Department and those of the HKSAR Health Department (for vital statistics, crime statistics, physical health statistics, etc.), and the quarterly reports of the HKSAR Census and Statistics Department (for wages, price indices, inflation rates, etc.). They are measures of objective environmental conditions.

In the latest release of the CUHK QOL Index, several observations can be highlighted for the year 2009. First, there was a drop in quality of life as far as the overall quality of life is concerned (from 104.83 in 2008 to 102.19 in 2009). Second, with reference to the different sub-domains, while there were increases in QOL scores in the economic subindex (31.15 in 2008 to 31.93 in 2009) and environmental subindex (23.18 in 2008 to 24.05 in 2009), development based on the social subindex (50.50 in 2008 and 46.21 in 2009) deteriorated. Third, regarding the discrete indicators, while there was improvement in several areas (e.g., mortality rate, life expectancy, public expenditure on health, stress index, life satisfaction, government performance, crime rate, real rental, current economic conditions, public expenditure on education, air index, water index, noise index, and recycle rate of municipal solid waste), the performance in several indicators (infectious diseases, press criticism, housing affordability, unemployment rate, and real wage rate) had deteriorated.

In conclusion, with reference to the findings generated from these quality of life studies, several observations pertinent to the quality of life of Hong Kong can be made. In general, there has been progress in the quality of life in Hong Kong after 1997. All three projects have observed significant economic development. However, economic development has to a certain extent been offset by decline in some areas of social development. The situation of some social groups, in particular, does not improve much. While some objective progress can be identified, people do not feel it subjectively. This sends warning signals about declining quality of life in Hong Kong.

## Cross-References

- ► Social Development
- ► Social Development Index
- ► Social Indicators

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# Hookups and Quality of Life

► Casual Sex and the Quality of Life

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# Hope and Quality of Life

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## Definition

Hope is defined in different ways, and one often cited definition by Dufault and Martocchio says that hope is "a multidimensional dynamic life force that is characterized by a confident yet uncertain expectation of achieving good, which is realistically possible and personally significant" (Dufault & Martocchio, 1985).

## Description

Dufault and Martocchio (1985) described two spheres of hope, generalized hope and particularized hope. Generalized hope refers to a belief in a beneficial yet uncertain future, while particularized hope more concretely identifies the objects of hope in a person's life. Benzein, Norberg, & Saveman (2001) also described these two dimensions in hope in cancer patients receiving palliative care. They described a tension between hoping for something, that is, a hope of getting cured and living in hope, that is, reconciliation and comfort with life and death. Which dimension is prominent varies over time. Hope is defined as a process, not as a trait. It can be affected by what we face.

Hope is often linked to stress and coping (Rustoen, 1995), and hope is identified as an important component of the individual's ability to cope with stress in life-threatening situations (Sand, Olsson, & Strang, 2008). Lazarus (2006) views coping as the effort to manage psychological stress. Hope is found to be an important coping strategy in patients with chronic illnesses (Raleigh, 1992) and in a study of family needs

(Koller, 1991). Similar results have been reported in other studies with terminally ill cancer patients (Clayton, Butow, Arnold, & Tattersall, 2005; Johnston & Abraham, 2000).

Studies in heart failure (Rustoen, Howie, Eidsmo, & Moum, 2005), cystic fibrosis (Rustoen, Wahl, Hanestad, Gjengedal, & Moum, 2004), and cancer (Utne, Miaskowski, Bjordal, Paul, & Rustoen, 2010) have shown that patients reported higher levels of hope than the general population. These findings challenge what hope means to an individual. It might suggest that hope becomes an effective coping strategy in providing adaptive power to help patients manage difficult situations, achieve meaning, and reach desired goals (Benzein et al., 2001; Herth, 2000; Reb, 2007).

The importance of hope has been described in family caregivers regardless of age, relationship, or setting, in a metasynthesis of the experience of hope in FCs of persons with chronic illnesses (Duggleby, Cooper, & Penz, 2009). In addition, family caregivers have reported lower levels of hope than the patients in a study of family caregivers of palliative patients (Benzein & Berg, 2005). Hope is also shown to be important for health professionals providing palliative care as hope sustained and motivated them and helped them to strive to provide high-quality care (Penz & Duggleby, 2011).

Although hope is an important resource for serious ill patients, few studies include it as an independent or dependent variable in quality of life research (Rustoen, Cooper, & Miaskowski 2011). A study including a community-based sample of cancer patients found that poorer health status, lower hope, and higher psychological distress were significantly related to lower satisfaction with life (Rustoen et al.). Hope was found to mediate the relationship between psychological distress and health status, such that the direct association between distress and health status was no longer significant with hope in the model. Finally, hope partially mediated the association between psychological distress and life satisfaction. These data suggest that hope is an important resource for oncology patients that impacts their quality of life. More research is wanted to further explore the relationship between hope and quality of life.

## Discussion

One challenge in the research on hope is that we compare results from different parts of the world, while several authors have suggested that hope is culture-specific (Averill & Sundararajan, 2005; Hsu, Lu, Tsou, & Lin, 2003). According to Averill and Sundararajan (Averill & Sundararajan, 2005), people in Western cultures emphasize the coping element of hope and that the Western conception of hope is predominantly an episodic emotional state. In contrast, people in Eastern cultures emphasize the wishing element of hope, and the Eastern conception is a more enduring personality trait. Although this variation in the view of hope exists, both views are included in Lazarus and Folkman's theoretical framework, either as a personality factor or as a coping strategy. Further studies need to focus on how hope differs across cultures and how these cultural differences impact coping. In addition, it is a challenge to understand how hope operates throughout the illness experience.

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## Hope Index

► Hope Scale

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## Hope Measure

► Hope Scale

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## Hope Scale

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### Synonyms

Hope index; Hope measure

### Definition

A standardized psychometric tool designed to measure respondents' hope levels.

### Description

Although "hope" has preoccupied mankind since time immemorial and a long and distinguished history of scholarship thereon exists (Eliot, 2005), standardized survey questionnaires designed to measure individuals' hope levels have only recently been developed; the majority, and certainly the most frequently cited, have only been developed in the past 25 years or so. Scale development has proven popular during this time, and several measures that have gone on to be widely used in a variety of settings (e.g., Nowotny Hope Scale, Snyder Hope Scale, Herth Hope Index) have been developed.

The scales developed share a few common features. Most were developed in clinical settings and frequently centered around nursing interventions. They tend to rely on respondents' self-reported answers to a series of statements about them. Answers are typically given using Likert-type responses (with responses ranging from "strongly agree" to "strongly disagree," for example) or some other related rating scale (with responses ranging from "none of the time" to "all of the time," for example). Depending on the scale used, questionnaires may vary between as few as six, for the Children's Hope Scale, to as many as 47 items, for the original Nowotny Hope Scale, in length. An instrument's length seems to vary depending on the dimension of hope which it seeks to measure (e.g., trait hope, state hope), the number of subscales which it consists of, and whether or not it has been directed at a specific subgroup (e.g., children) or a wider population.

Reported Cronbach alpha coefficients of above 0.7 are common using any number of these measures. Test-retest validity has also been found to be quite high (above 0.8) for periods in excess of 10 weeks. In addition, tests of convergent validity demonstrate the positive correlation of the results gathered using these measures with related similar constructs such as optimism and self-efficacy and their negative correlation with constructs such as hopelessness and depression. Readers are referred to the summaries contained in Snyder, Rand, and Sigmon (2002) and Stoner (2004) for reviews of various hope measures' tests of reliability, test-retest validity, and convergent validity.

Although most of the scales initially developed were mainly intended for use in clinical settings, either in hospitals themselves or among patients diagnosed with a particular life-threatening illness, during the past few years considerable effort has been devoted to using them to measure hope levels in more general populations. Despite this change in emphasis, testing and measurement using these instruments often still takes place using relatively small (small: fewer than 200 participants) samples of members of other closed populations, mainly university students.

## Cross-References

- ▶ Attitude Measurement
- ▶ Herth Hope Index
- ▶ Hope Scale
- ▶ Structured Questionnaires
- ▶ Subjective Indicators

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# Hopefulness

▶ Empowerment

# Hopkins Psychiatric Rating Scale

▶ Derogatis Psychiatric Rating Scale (DPRS)

# Horizontal Inequalities

▶ Social Inequalities

# Horticultural Therapy

▶ Gardens and Well-Being

# Hospice

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## Synonyms

Palliative care

## Definition

Hospice (*n.*) can mean either an institution or other site that provides ▶ palliative care to people with a life-limiting illness or a philosophy of care (also referred to as hospice care) that focuses on a person's mental and physical well-being and ▶ quality of life rather than on a cure for an illness (Raymer & Reese, 2012; Concise Medical Dictionary (8 ed.), 2012). Hospice and hospice care provide short-term ▶ end-of-life care to manage disease-related physical symptoms and pain, and offer psychological, social, and spiritual care and support to patients and their families.

## Description

The term hospice derives from the same linguistic source as hospitality – from the Latin word *hospes/hospis* which meant both a guest and a host (Cresswell, 2011; Morwood, 1994). The origins of hospice care can be traced to medieval Europe where monasteries and convents provided shelter and comfort for the sick or impoverished and pilgrims or travelers (Last, 2007; Saunders, 2001). The word hospice was first used in the nineteenth century to describe caring for dying patients when Mme. Jeanne Garnier established the Dames de Calaire in Lyon, France, in 1842 (Amitabha Hospice Service, 2009). Thirty-seven years later, the Irish Sisters of Charity opened Our Lady's Hospice in Dublin and in 1905, the St. Joseph's Hospice in London, UK (Hinds Hospice, 2007).

It was not until 1967 when Dame Cicely Saunders (1918–2005) founded the St. Christopher's Hospice in London, UK, that the term "hospice" became more widely used (NHPCO, 2010). It is generally acknowledged that her work drove the palliative care movement, providing the foundation and inspiration for the growth of the hospice movement in Europe and North America (NHPCO, 2010). The contemporary hospice movement adapted Saunders' comprehensive approach to palliative care, which included improved methods of pain management and an understanding of the personhood of the patient with specific and individual needs at the end stage of life.

Most hospices in the UK today are small institutions that provide short-term care, funded by charitable organizations that grew out of the hospice movement of the 1980s. A detailed explanation of Saunders' "comprehensive approach to dealing with the physical, social and psychological suffering of dying people" can be found in Clark (2002).

In the United States, the first residential hospice opened in 1974, developing from a small volunteer-led movement into an integrated part of the ▶ health care system (Bonebrake, Culver, Call, & Ward-Smith, 2010). According to the Mayo Clinic (2007), 90 % of hospice care in the United States is provided in patients' homes. Additionally, because of the structure of the American ▶ health care system, in order to qualify for the Medicare Hospice Benefit (U.S. Department of Health and Human Services, 2013) which provides the main source of hospice funding, people (over the age of 65 years or who are disabled) are only eligible for hospice placement if they have been given a life expectancy of 6 months or less by two physicians and are no longer seeking a cure for their illness (Center for Medical Advocacy, 2006; Kramer, 2008). Nonhospice palliative care programs, on the other hand, are available throughout the entire course of illness, "with no restrictions on the nature of disease or expected prognosis, and may be given alongside curative treatment" (Kramer, 2008).

The earliest hospice programs in ▶ Canada began in 1975 at St. Boniface Hospital in Winnipeg and at the Royal Victoria Hospital in Montreal (Victoria Hospice Society, 2011). Today, there are only a few residential hospices, defined by the Canadian Hospice Palliative Care Association (CHPCA) (1997) as "separate buildings or apartments where palliative care is provided in a home-like setting." Because of the shortage of residential hospices in Canada, the majority of palliative care is provided at home, in hospitals or in long-term care facilities. Hospice care always involves ▶ palliative care, which focuses on the relief of suffering and improving the ▶ quality of life for patients dying from an advanced illness (Kramer, 2008). Rather than curative treatment, hospice care includes pain management as well as psychological and social support for patients and their families. The terms "hospice care" and "palliative care" are frequently used interchangeably although some people refer to end-of-life care that takes place in the community, rather than hospitals, as hospice care.

Although access to institutionalized hospice care is based on criteria that gives preference to those people who have a life-limiting illness in the last stages of life, patients may also be admitted to hospice at an earlier stage of their illness, return home for a period of time, and be readmitted to hospice at a later date as their condition warrants. In addition, some hospices offer short-term respite for family caregivers. Because the structure of the Canadian health care system is based on the Canada Health Act of 1984, payment for hospice care depends on whether the care is provided in hospital or at home and varies by province (CHPCA, 2011). Sometimes coverage for residential hospice care is not covered by the public health care system, in which case patients or their families must pay for the costs of care.

Many contemporary residential hospices are based on Saunders' model of care, which focuses on "symptom management and maintaining the psychological ▶ well-being of patients" (Concise Medical Dictionary, 2012). Residential hospices focus on symptom management and maintaining patients' psychological well-being (Concise Medical Dictionary, 2012). Another important aspect of hospice, which emphasizes the importance of acknowledging individual patient needs, is the active involvement by patients and their families in the decision-making process about their own care. Although definitions vary, MedlinePlus, a service of the US National Library of Medicine (2011), provides the following comprehensive definition of hospice care:

"Hospice care is end-of-life care provided by health professionals and volunteers. They give medical, psychological and spiritual support. The goal of the care is to help people who are dying have peace, comfort and dignity. Caregivers try to control pain and other symptoms so a person can remain as alert and comfortable as possible. Hospice programs also provide services to support a patient's family."

While hospice is often identified with a specialized unit in a hospital, nursing home, long-term care facility, or separate dwelling where 24-hour care provided by professionals and volunteers is given to patients who are dying, the contemporary interpretation of hospice is also as a philosophy of care. This is clearly illustrated by a list created by Palliative Care Australia (2011), which states that the primary objectives of hospice palliative care are to enable people facing death:

- To be as free as possible from unnecessary suffering (physical, emotional, or spiritual)
- To maintain their dignity and independence throughout the experience
- To be cared for in the environment of choice
- To have their grief needs recognized and responded to
- To be assured that their families' needs are also being met

### Discussion

One of the main problems with hospice care is that it may not be started soon enough. Reasons for this vary but consist of fearful attitudes toward death and dying in Western culture, which include an association of the words "hospice" and "palliative" with imminent death, giving up, or a sense of hopelessness. As a result, many patients and their families often turn away from care that could greatly benefit them in the long term. In addition, with a shortage of institutional hospice facilities in the USA and Canada, access may be limited or unavailable for many patients who desire and request this service.

## Cross-References

▶ Care, End of Life
▶ Care, Long-Term

- ▶ Care, Palliative
- ▶ Caregiver
- ▶ Health Care
- ▶ Nursing Home Residents
- ▶ Pain
- ▶ Quality of Life
- ▶ Well-being

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## Hospice Care

▶ Care, Palliative

## Hospital Anxiety and Depression Scale (HADS)

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### Definition

This is a self-assessment scale originally designed to detect the common mental disorders of depression and anxiety in adults aged 16–65 attending medical (nonpsychiatric) outpatient clinics.

### Description

#### Rationale for Development

The scale was developed by AS Zigmond and RP Snaith both at the Department of Psychiatry of the University of Leeds and was first published in 1983 (Zigmond & Snaith, 1983). The aim of the authors was to develop a scale with the following characteristics:

(a) The scale should be brief.
(b) It should distinguish between the two most common mental disorders in these settings, depression and anxiety.
(c) It should avoid the use of "somatic" symptoms of psychiatric disorders that could also be attributed to physical illnesses, e.g., various symptoms of pain, fatigue, dizziness, or sleep problems.
(d) It should provide clear instructions for the interpretation of the scores (Snaith, 2003).

#### Description of the Items/Subscales

There are two subscales, the depression subscale and the anxiety subscale, consisting of seven items each. The depression subscale is largely based on questions related to the absence of positive affect (e.g., loss of pleasure – "anhedonia" – or loss of interest) and not on the presence of negative affect (e.g., sadness). Examples of key questions include:

- I still enjoy the things I used to enjoy.
- I can laugh and see the funny sides of things.
- I look forward with enjoyment to things.

The anxiety subscale consists of items related to worry or cognitive aspects of anxiety, panic anxiety, and tension/nervousness. Examples of key questions include:

- I feel tense or wound up.
- Worrying thoughts go through my mind.
- I get sudden feeling of panic.

The scale is administered as a paper and pencil questionnaire for self-completion, but an interviewer can also assist in special cases (e.g., poor vision). The scale has been translated and/or validated in at least 33 languages across the world.

#### Scoring and Cutoffs

According to the developers (Zigmond & Snaith, 1983), scores from the two subscales should not be merged into one total score as one of the aims of the scale was to distinguish between anxiety and depression. Each subscale uses a 4-point Likert scale with a range from 0 ("not at all") to 3 ("most of the time"). Reverse scoring is used for items with positive wording (e.g., "I still enjoy the things I used to enjoy"), and therefore a higher score indicates more severe disorder with a potential range from 0 to 21 for each subscale.

According to the original paper (Zigmond & Snaith, 1983), a score of 7 or less represents noncases, 8–10 doubtful cases, and 11 or more definite cases of either depression or anxiety. Based on subsequent work, the authors have also recommended that a score of 8–10 should be classified as a mild disorder, 11–15 as a moderate disorder, and 16 or more as a severe disorder (Snaith & Zigmond, 1994).

#### Acceptability/Ease of Administration

According to the extensive review of the scale (Herrmann, 1997), most studies found that the scale is very well accepted with general response rates in studies with patients from 95 % to 100 %.

The scale can be completed in 2–6 min, and the scoring can be calculated in less than one minute, making the scale very acceptable for both patients and providers.

## Psychometric Data

The psychometric characteristics of the scale have been extensively reviewed by Bjelland, Dahl, Haug, and Neckelmann (2002). These authors reviewed 747 papers that used HADS and reported validity and reliability data.

### Reliability

Internal Consistency: For the depression subscale (HADS-D), the ▶ Cronbach's alpha varied from 0.67 to 0.90 with a mean value of 0.82. For the anxiety subscale (HADS-A), the ▶ Cronbach's alpha varied from 0.68 to 0.93 with a mean value of 0.83.

Test-retest: In a large study of the HADS in different groups of Dutch subjects (Spinhoven et al., 1997), the test-retest reliability for the depression and anxiety subscales was assessed over a mean 3-week period using the Pearson product-moment ▶ correlation coefficient and was found to be 0.86 and 0.89, respectively.

### Validity

*Factorial Validity*: According to the review of Bjelland et al. (2002), most of the 19 studies that carried out a factor analysis of the HADS confirmed the existence of two factors broadly corresponding to the original items of the depression and anxiety subscale. Most of these studies have used ▶ exploratory factor analysis or ▶ principal component analysis. More recent studies, however, using confirmatory factor analytic techniques and reviewed by Martin, Thompson and Barth (2008), have suggested that a 3-factor solution may have a better fit from a 2-factor one. This solution consists of a depression-anhedonia dimension (which is identical to the depression subscale), but the anxiety subscale is split into two dimensions, generalized anxiety/negative affectivity and physiological arousal (Bjelland et al., 2002; Martin et al., 2008). These findings are in accordance with Clarck and Watson's tripartite model of depression and anxiety (Clark & Watson, 1991). In either case, the correlation between anxiety and depression subscales (or the anxiety and depression factors in factor analyses) is quite high with a mean value of r = 0.56 (Bjelland et al., 2002). Although this finding is against the original intention of the scale to distinguish between these two concepts in clinical practice, it is nevertheless compatible with later studies showing that depression and anxiety are usually comorbid, possibly due to common neurobiological risk factors and not due to symptom overlap.

*Concurrent Validity*: According to the review by Bjelland et al. (2002), the HADS shows strong correlation with similar measures of depression or anxiety, such as the ▶ Beck Depression Inventory, the General Health Questionnaire, and the ▶ Spielberger State-Trait Anxiety Inventory, usually in the range of 0.60 to 0.80. The anxiety subscale shows higher correlations with anxiety scales while the depression subscale with similar depression scales. A more recent study also found a strong correlation of 0.68 between the depression subscale of HADS and the 9-item Patient Health Questionnaire (Cameron, Crawford, Lawton & Reid, 2008).

### Sensitivity and Specificity for the Identification of "Cases"

Bjelland et al. (2002) in their review have assessed the usefulness of the HADS to identify "cases" in several settings. The studies generally confirm that sensitivity and specificity are maximized for the cutoff of 8 or more in both subscales, although there are some minor differences depending on the setting. In non-cancer medical patients, a cutoff of 8 or more is associated with a sensitivity of 0.90 for anxiety and 0.83 for depression while the specificity is 0.78 and 0.79, respectively. In cancer patients, a higher cutoff for anxiety of 9 or more was reported. It should be noted that although mean specificity remains good for cancer patients, the mean sensitivity is lower for both subscales (0.72 for anxiety and 0.66 for depression).

The HADS has been compared with several versions of the general health questionnaire and the ▶ Beck Depression Inventory as a case-finding instrument, and the results are comparable with both (Bjelland et al., 2002).

### Uses in Various Settings: Clinical Experience

The scale has been used as a screening instrument for depression in several medical settings, in primary care, and even in community settings, although originally it was not developed for nonmedical settings. Herrmann (1997) has reviewed several of these studies. Most of the studies had a cross-sectional design, and HADS was mainly used either to assess the prevalence of depression or anxiety in several groups of patients or to correlate psychiatric symptoms with sociodemographic or clinical variables. As expected, fewer longitudinal studies have been conducted with HADS, and in most of them, there was no association of either HADS-D or HADS-A with clinical outcomes or mortality.

HADS has also been used in community settings, and the largest of these general population surveys was the HUNT study in Norway (Mykletun, Stordal & Dahl, 2001). HADS has also been tested in adolescents (White, Leach, Sims, Atkinson & Cottrell, 1999), and the findings of the validation study were positive for its use as a screening tool for common mental disorders in schoolchildren aged 12–17.

## Discussion

This entry shows that the Hospital Anxiety and Depression Scale is a very well-established scale to detect anxiety and depression in various, mostly medical, settings. All original intentions of the developers have been largely met, and the use of the scale both in research and clinical practice is widespread across the world. It is worth noting that HADS is one of the most highly used and cited symptom scales in psychiatry. According to Scopus database, HADS is the third most cited depression-related scale after the Beck Depression Inventory and the Hamilton Rating Scale for Depression with more than 7,500 citations. Due to its popularity, the UK organization National Institute for Health and Clinical Excellence (NICE) has selected this scale as one of the three recommended scales to assess the severity of depression in primary and secondary care. Even though the factor structure of the scale has been criticized in later studies (with some studies showing evidence of a three-factor structure), the clinical implication of this finding is not clear, and it is likely that it will not affect the everyday use of the scale as a screening tool of depression and anxiety or as a measure of their severity.

## Cross-References

- ▶ Beck Depression Inventory
- ▶ Caregivers of Patients with Eating Disorders, Quality of Life
- ▶ Correlation Coefficient
- ▶ Cronbach's Alpha
- ▶ Exploratory Factor Analysis
- ▶ Principal Component Analysis
- ▶ Spielberger State-Trait Anxiety Inventory

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# Hospital Anxiety and Depression Scale for Use Among Adolescents

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## Synonyms

HADS; Youth Self-Report (YSR) Anxious/Depressed subscale

## Definition

The Hospital Anxiety and Depression Scale (HADS, Zigmond and Snaith, 1983) is a self-report instrument for assessing states of depression and ▶ anxiety suitable for use among both medical patients and general population in the community. Adolescence is a developmental transition from childhood to adulthood, with substantial physical and psychological changes.

## Description

Adolescence occurs from about age 11 or 12 until the late teens or early twenties, with major physical, cognitive, and psychosocial changes. Arnett (1999) described the transition as a period of "storm and ▶ stress," with many other studies providing supporting evidence that adolescents tend to experience more emotional difficulties and have more frequent episodes of depressed ▶ mood than either children or adults (Buchanan & Holmbeck, 1998; Kessler et al., 2005). Indeed, onset of anxiety and depression often emerges during adolescence (Kessler et al.). Lifetime prevalence of depression increases dramatically from 1 % under age 12 to around 17–25 % by the end of adolescence (Kessler, Avenevoli, & Ries Merikangas, 2001). In an Australian sample, 14.2 % of adolescents were identified as depressed (Boyd, Gullone, Kostanski, Ollendick, & Shek, 2000). Anxiety symptoms are also highly prevalent among adolescents, with a prevalence of 13.2 % reported (Boyd et al., 2000). A recent longitudinal study (Van Oort, Greaves-Lord, Verhulst, Ormel, & Huizink, 2009) reported that anxiety symptoms increase from middle to late adolescence.

Depression and anxiety interfere significantly with adolescents' daily lives, including interpersonal and academic functioning, leading to substantial psychosocial problems, as well as increase the risk for various maladaptive behaviors such as substance abuse and suicidal behaviors (Woolley & Curtis, 2007). Despite the significance and seriousness of depression and anxiety among adolescence, many adolescents suffering from depression and anxiety are unidentified and undiagnosed, with only a small proportion receiving mental health care and treatment (Kataoka, Zhang, & Wells, 2002). These undiagnosed and untreated disorders are likely to persist into adulthood (Woodward & Fergusson, 2001).

Intervention programs targeting anxiety and depression in adolescents are much needed, but their success depends much on accurate identification of adolescents at risk for these disorders (Pullen, Modrcin-McCarthy, & Graf, 2000).

However, there is a lack of suitable instruments for use in community to screen anxiety and depressive symptoms among adolescence. A brief and sensitive self-rated instrument for assessing specific manifestations of anxiety and depressive symptoms among adolescents is necessary to assist with screening, early identification, service referral, prevention, and intervention.

The Hospital Anxiety and Depression Scale (HADS) is a 14-item self-report screening scale, developed by Zigmond and Snaith (1983), in order to measure the presence and the severity of depression and anxiety among patients at general medical outpatient clinics. It contains two subscales with 7 items each providing separate measures of anxiety (HADS-A) and depression (HADS-D). Participants are asked to complete the scale by rating the frequency and intensity of symptoms over the past 2 weeks, using a 4-point scale, ranging from 0 to 3. Higher scores indicate higher levels of anxiety and depression, with possible scores for anxiety and depression each ranging from 0 to 21. The cutoff of 7/8 was recommended for each subscale to identify probable cases of clinically significant anxiety or depression (Zigmond & Snaith, 1983). Specifically, three cutoff levels were identified: a score between 8 and 10 indicates a mild case, 11 and 14 a moderate case, and 15 or above a severe case (Crawford, Henry, Crombie, & Taylor, 2001). It is worth noting that the HADS was specifically developed to measure depression and anxiety states focusing on affective symptoms and minimizing the somatic symptoms such as dizziness, insomnia, and ► fatigue that are common among anxiety and depression patients but can also be related to physical disorders and thus are not specific to anxiety and depression. In this regard, the HADS is a relatively pure measure for reflecting psychological disturbances and is superior to other instruments that may inflate the rates of anxiety and depression. Hence, it is suitable to use in a nonpsychiatric setting (Arving, Glimelius, & Brandberg, 2008).

The validity and ► reliability of the HADS have been demonstrated in various translated versions across culturally diverse groups (Muszbek et al., 2006). A review of the 747 identified papers that used HADS in general adult population and various patient populations was performed to evaluate the psychometric properties and diagnostic efficacy of the HADS (Bjelland, Dahl, Haug, & Neckelmann, 2002). The study reported that most factor analyses demonstrated a two-factor model in good accordance for HADS-A and HADS-D. ► Cronbach's alpha for HADS-A varied from .68 to .93 (mean = .83) and for HADS-D, from .67 to .90 (mean = .82). The sensitivity and specificity for both HADS-A and HADS-D with the cutoff of 7/8 were frequently found to be in the range of .70 to .90 (Berard & Ahmed, 1995; White, Leach, Sims, Atkinson, & Cottrell, 1999). Although HADS was well-developed and widely used in adult populations, its usefulness in adolescents remains understudied.

Only a few studies evaluated the psychometric properties of the HADS among adolescent populations. The HADS was validated for use with schoolchildren, psychiatric patients, and deliberate self-harm inpatients aged 12–17 (White et al., 1999). The authors found that in clinical settings, lower cutoffs (7 for depression and 9 for anxiety) could minimize the probability of false negatives, whereas in community settings, higher cutoffs (10 for depression and 12 for anxiety) could minimize the chance of false positive. In addition, their results generally supported the two-factor structure found with adults by Zigmond and Snaith (1983). However, one item "I can sit at ease and feel relaxed" was originally scored as an anxiety subscale but loaded on the depression subscale, reflecting the possibly differential manifestation of depression among adolescents. Nevertheless, this may be a more generic observation as it was also consistent with Moorey et al. (1991) study among cancer patients in questioning whether this item should have been better included in the depression subscale rather than in the anxiety subscale. Despite some small inherent problems, the HADS is a potentially useful tool for screening adolescents in both community and hospital settings, given that it is short and easy to administer, and with good reliability and adequate sensitivity and specificity. A recent study (Chan, Leung, Fong, Leung, & Lee, 2010) in Hong Kong further supported that the translated Chinese version of HADS is a suitable screening instrument for use with adolescents. In their study, 5,857 secondary students aged 10–19 in Hong Kong were invited to complete the HADS, a measure of intensity of suicidal thoughts, and the Youth Self-Report (YSR) Anxious/Depressed subscale (Achenbach, 1991). Using Zigmond and Snaith's original two-factor model, the coefficient values of alpha using the total sample were 0.91 for the full scale and 0.80 and 0.63 for the anxiety and depression subscales, respectively. Examination of the factor structure indicated that although the results supported Zigmond and Snaith's original model (1983), the best fit to the data was found using the two-factor model by Moorey et al. (1991), and this was further cross validated by male, female, split half samples, and age subgroups. Thus, this result was consistent with White et al. (1999) findings, suggesting that the item "I can sit at ease and feel relaxed" is better grouped in the depression cluster and being a better representation of depression than anxiety among adolescents. The Cronbach's alpha for the depression and anxiety subscale were.67 and.79, respectively, according to Moorey et al. two-factor model. Regarding the concurrent validity, both HADS depression and anxiety subscales correlated positively with the intensity of suicidal thought, and there was a moderate to high correlation between the HADS and the YSR Anxious/Depressed subscale. The HADS can thus be regarded as an adequate screening instrument with satisfactory psychometric properties for assessing anxiety and depressive symptoms among the adolescent population.

Although the HADS was mainly developed for adults, previous studies (Chan et al., 2010; White et al., 1999) have already demonstrated that the HADS is a suitable and useful screening instrument for adolescents, and some previous studies on adolescence have used the HADS to assess the mood states of adolescents either in community settings or in clinical settings. A study (Jörngården, Wettergen, & Von Essen, 2006) used the HADS to screen general adolescent and adult population (aged 13-23) in Sweden in order to examine the effect of method of administration, age, and gender on depression and anxiety and to provide ▶ normative data for the HADS. They found out that females reported poorer health-related quality of life and HADS anxiety score than males, and younger adolescents aged between 13 and 15 years old reported better ▶ health-related quality of life and mental health as measured by the HADS than older age groups. Also, older female participants aged from 20 to 23 years old reported the highest level of emotional distress and the lowest health-related quality of life in postal questionnaires.

Besides general adolescent population, the HADS was widely used to assess anxiety and depression levels among adolescents with physical illnesses, including acne vulgaris' acute (post-operative) and chronic pain (temporomandibular disease, TMD) and cancer, with findings pointing to these diseases being associated with increased psychiatric morbidity as measured by HADS (Bleyer, 2002; Manfredini, Bandettini Di Poggio, Cantini, Dell'osso, & Bosco, 2004). Aktan et al. (2000) used the HADS to investigate whether there are any significant differences in the states of depression and anxiety between subjects with acne and control subjects. Two previous studies demonstrated the usage of the HADS in a group of adolescents with chronic pain caused by temporomandibular disease (TMD) and acute postsurgical pain to investigate the relationship between pain and mental health problems among adolescent patients (Bonjardim, Gaviäo, Pereira, & Castelo, 2005; Gillies, Smith, & Parry-Jones, 1999). Bonjardim et al. (2005) study reported that there was a positive association between the clinical sign of muscle tenderness in temporomandibular disorders and adolescent anxiety. Gillies et al. (1999) study demonstrated the impact of anxiety and depression on 1st and 3rd day of postoperative ▶ pain among adolescents. The literature on psychiatric morbidity among adolescent patients with cancer documented that anxiety and depression were significant problems which affected their ▶ quality of life and survival. A previous study was conducted using the HADS to investigate the anxiety and depression level of the adolescents recently diagnosed with cancer (Hedström, Ljungman, & von Essen, 2005). This study documented the high ▶ prevalence of depression and anxiety among adolescents who were diagnosed with cancer, and the prevalence of pain was higher among adolescent patients who scored above cutoff on depression. A longitudinal study further assessed how the health-related quality of life, anxiety, and depression of adolescents with cancer differed from those of control group shortly after diagnosis and subsequently at 6,12, and 18 months after diagnosis using the HADS (Jörngården, Mattsson, & von Essen, 2007). This study showed that the psychological well-being aspects of the health-related quality of life of cancer patients were significantly worse than general population and gradually improved from the time of diagnosis. Anxiety and depression were also more prevalent than the general population and followed the pattern of improvement as in health-related quality of life from the time of diagnosis. However, at 1.5 years after diagnosis, they reported lower levels of anxiety and depression and better health-related quality of life than the reference group. In this study, the evaluations of the psychological well-being aspect of health-related quality of life were measured by the vitality and mental health subscales of the short form 36 (▶ SF-36). The trend and changes of these two subscales match with the HADS anxiety and depression subscales in a longitudinal manner among cancer young adults.

In addition, the HADS was also used to examine anxiety and depression in different groups of adolescents with specific physical conditions. A study was conducted with an aim to compare levels of psychological symptomatology in fathers in the setting of teenage as compared to non-teenage pregnancy. The HADS was used as one of the main measure of psychological symptomatology for teenage fathers during the antenatal period. The results showed that depression and anxiety were more prevalent in teenage fathers than older fathers (Quinlivan & Condon, 2005). Cooke (2004) used the HADS as part of the measurement of quality of life of a group of young adults who were born preterm to clarify whether the higher prevalence of behavioral, minor motor, and learning difficulties in preterm babies would persist into adulthood to impact on their quality of life in later life. It was reported that young adults who were born preterm were more likely to be high scorers in anxiety subscale of the HADS (Cooke, 2004). A large-scale study in UK investigating alcohol and drug use among UK university students in their early twenties used the HADS as an instrument to assess the relationship between substance use and anxiety and depression. Findings showed no significant association between substance use and anxiety (Webb, Ashton, Kelly, & Kamali, 1996).

Besides the HADS, several screening measures were developed specifically for screening of adolescents' psychiatric morbidity, including the ▶ Center for Epidemiologic Studies Depression Scale for Children (CES-DC), and the ▶ Beck Depression Inventory-Youth (BDI-Y) is a 20-item self-report scale designed to assess items of depressive symptoms required for the diagnosis of depression according to the Diagnostic and Statistical Manual of Mental Disorders-IV in children aged 7–14 (Stapleton, Sander, & Stark, 2007). Items are measured on a Likert scale of 0–3 with higher scores indicating higher levels of depressive symptomology. It was shown to have good reliability with Cronbach's alpha coefficient greater than 0.84 (Basker, Moses, Russell, & Russell, 2007). The CES-DC was developed by the Center for the Epidemiological Study of Depression to screen for depressive symptoms in children ages 6–17 years at least 2 weeks prior to the administration of the instrument (Cuijpers, Boluijt, & van Straten, 2008). The instrument is a self-report 20-item scale, with a 10-item short form available. Each item is measured on a ▶ Likert scale from 0 to 3, with higher scores indicating higher levels of depression. Strong internal consistency was demonstrated with Cronbach's alpha coefficients ranging from 0.85 to 0.93 (Cuijpers et al., 2008). In comparison to these two scales, the HADS measures both depression and anxiety states focusing on affective symptoms and minimizing the somatic symptoms that are also related to physical disorders. It is relatively shorter than the BDI-Y and easy to administer and score. The wordings are also interpretable for adolescents.

Although the screening results from the HADS might not guarantee a clinical diagnosis, it provides a valid, reliable, and objective assessment with adequate sensitivity and specificity for use with adolescents in both community and clinical settings. It has an important role to play in aiding early identification of possible cases so that further in-depth diagnostic assessment can be conducted and prompt referral can be made. It also serves as a valuable research tool to facilitate mental health research among adolescents.

## Cross-References

- ▶ Anxiety
- ▶ Beck Depression Inventory
- ▶ Center for Epidemiologic Studies Depression (CES-D) Scale
- ▶ Cronbach's alpha
- ▶ Fatigue
- ▶ Health-related Quality of Life
- ▶ Likert Scale
- ▶ Mood
- ▶ Normative Data
- ▶ Pain
- ▶ Prevalence
- ▶ Quality of Life
- ▶ Reliability
- ▶ SF-36
- ▶ Stress
- ▶ Suicidal Behavior

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## Hostile Sexism

▶ Gender Inequality and Subjective Well-Being

## Hotel Service Quality

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### Synonyms

HSQ; Service quality of hotels

### Definition

HSQ is a hotel administration term used to describe performance in service quality of hotels and customer satisfaction. The HSQ performance needs to be improved continually with management techniques and quality standards, such as star rating system of hotel classification.

As international travelers expect quality standardized, hotels require providing professional, efficient, and international service like reservation systems, clean and comfortable rooms, and good staff's attitudes.

## Description

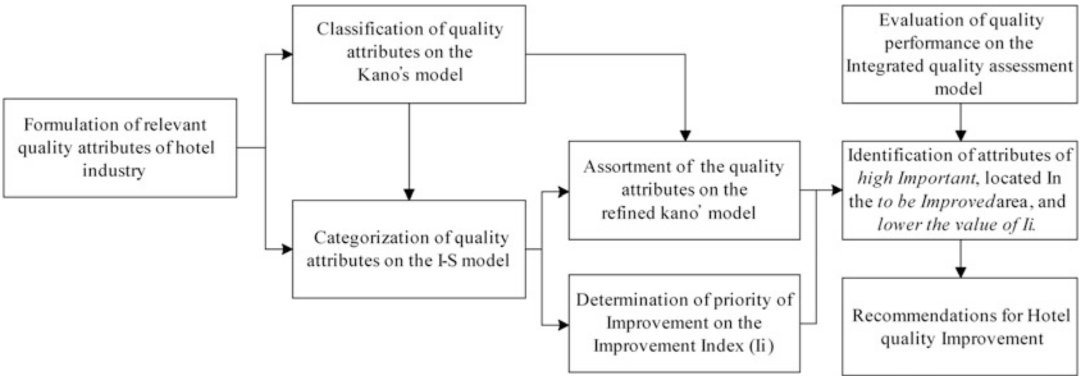
In the age of growing international tourism, providing excellent quality service at hotels is increasingly more important. Thus, the HSQ performance needs to be improved continually with management techniques and quality standards, such as star rating system of hotel classification (Pine & Phillips, 2005). Additionally, as international travelers expect quality standardized, hotels require providing professional, efficient, and international service like reservation systems, clean and comfortable rooms, and good staff's ▶ attitudes (Mace, 1995). Yang, Jou and Cheng (2011) established the HSQ assessment, which integrated with the Kano's model, refined Kano's model, Importance-Satisfaction model (I-S model), and improvement index (I*i*) to obtain more valuable quality information that achieves the professionalism and standardization of hotel service quality.

Service quality and customer satisfaction have gradually been recognized as key factors used to gain competitive advantage and customer retention (Callan & Kyndt, 2001; Su, 2004). Most companies conducted satisfaction surveys of their customers, with a view of using analyzed results to identify attributes of potential improvement. However, these kinds of improvement decisions on the attributes with a lower satisfaction level need not to be appropriated. The crucial point of customer satisfaction is to identify the important attributes, considered by customers as their needs and expectations. In fact, service industry, especially in hotels, often faces two obstacles. First, there are relatively few reliable and valid instruments used to measure quality perceptions in service industry. Second, they do not know what aspects the customers consider to be important and when to evaluate the hotel experience (Gundersen, Heide, & Olsson, 1996).

Some studies were conducted to develop theoretical frameworks and introduce various methodologies to measure service quality in different types of hotel industry (Akbaba, 2006; Callan & Kyndt, 2001; Ekinci, Prokopaki, & Cobanoglu, 2003; Juwaheer, 2004). These studies proved that there have been different elements of service quality dealt with for the hotels that serve different markets in the world. In addition, research into various types of hotel industry has been investigated, such as business hotels, resort hotels, motels, airport hotels, and convention hotels, and all have distinguishing characteristics. Besides, some of these studies have been undertaken to measure the factors that affect the selection of accommodation by customers. There are relevant attributes, such as cleanliness of room, convenient location, ▶ security, image, value for price, additional services like international direct dialing (IDD) facilities, friendliness of staff, and leisure facilities as some of the most important factors in the selection of accommodation (Choi & Chu, 2001; Lockyer, 2003).

Indeed, in a highly competitive global society, the hotel industry needs to implement proactive strategies and create brilliant quality attributes targeted. The improvement of service quality was realized to be an imperative strategy for raising competitiveness. Thus, we established an integrated quality assessment with the purpose of categorizing actual requirements of customers and their actual satisfaction level. This research also explores the areas of customers' importance and satisfaction with accommodation attributes to achieve the goal of useful evaluation. Therefore, the objective of this research is to assess the service quality of business and resort hotels using integrated quality assessment. The specific purposes of this study were (1) to classify the quality attributes on Kano's model, (2) to sort the quality attributes on the refined Kano's model, (3) to categorize the quality attributes on the Importance-Satisfaction model (I-S) model, (4) to decide the priority of improvement on the basis of the improvement index (I*i*), and (5) to compare these two kinds of hotels.

Kano's model was developed with the purpose of helping one better understand how the



**Hotel Service Quality, Fig. 1** The model of assessing quality of hotel industry (Yang et al., 2011)

relationship between the degree of fulfillment and the level of customer satisfaction of attributes can be categorized into five categories of perceived quality, that is, Attractive, One-Dimensional, Must-Be, Indifferent, and Reverse (Kano, Seraku, Takahashi, & Tsuji, 1984). Yang (2005) proposed a refined Kano's model which conducted a recent study with the aim of further refining the precision of the Kano's model in evaluating the influences of quality attributes. Yang (2003) had used simultaneous surveys of customer satisfaction and surveys of the importance of certain quality attributes to develop an Importance-Satisfaction model (I-S model). Continuous improvement is considered one of the important quality activities for an organization to pursue the best quality for its services. Yang (2004) indicated that it is possible to define an improvement index (I*i*) for each attribute as satisfaction level minus the importance degree then divided by the importance degree.

The HSQ assessment is designed to assess the quality of hotels using integrated quality assessment. In order to better comprehend and effectively accomplish the specific purposes of the study, a model of assessing quality of hotels is developed as Fig. 1. This model helps in terms of defining the major factors and paths of the study. There are eight primary steps and four major paths incorporated in the model. The following research questions (RQ) were developed to guide the investigation. RQ1: What are the differences of quality attributes classifications defined by Kano's model among customers between the two types of hotels? RQ2: What are the differences of quality attributes categorization defined by the refined Kano's model among customers between the two types of hotels? RQ3: What are the differences of quality attributes identified that need to be improved among customers between the two types of hotels? RQ4: What kinds of quality attributes need to be considered first among customers between these two types of hotels?

This study is based on a survey taken by 234 international travelers from two types, business and resort, of hotels. Twenty-four service items and quality attributes considered in hotel were developed and included in the instrument for study. The final questionnaire consisted of three general categories: (1) how customers would feel if an item was either fulfilled or unfulfilled, (2) how customers would feel if an item had a different degree of importance or satisfaction level, and (3) four demographics items.

## Discussion and Conclusion

Some worthy findings of these surveys are summarized as following. The item of "to provide Internet access services" is a "highly attractive" attribute and belongs to the "excellent" area in business hotels. Thus, the owners of business hotels should consider this service item as a priority for improvement. The item of "to provide breakfast for our guests" is a "critical" attribute and belongs to the "to-be-improved" area in resort hotels. Thus, the first priority is to provide breakfast with good quality for the guests in resort hotels. Unexpectedly, this service in business hotels is a good means for attracting more customers. The item of "to provide the toothbrush and toothpaste" is a "critical" attribute and belongs to the "to-be-improved" area in resort hotels. It is also the second improvement needed in resort hotels. Thus, the owners of resort hotels must immediately fulfill the requirements of customers by providing toothbrushes and toothpaste. The item of "room rate is reasonable" is a "highly attractive" attribute and belongs to the "to-be-improved" area both in business hotels and resort hotels. It is also respectively the first improvement needed in business hotels and the third in resort hotels. Thus, setting the reasonable room rates is required most urgently for enhancement both in these two types of hotels. The item of "to provide swimming pool facility" is a "highly attractive" attribute and belongs to the "excellent" area in resort hotels. Thus, the owners of resort hotels should consider this service item to attract potential customers in resort hotels.

This study contributes for bettering the service quality of hotels as well as enhancing the future improvement planning and strategy. Customers usually evaluate products and service quality according to the attributes they consider to be important (Deming, 1986). This HSQ assesment considers the importance degree as also a critical dimension considered by customers when hotels evaluate quality performance. This study examined two kinds of customer surveys in two types of hotels. Besides, this research provided four kinds of method of analytic results that can be referred as worthy and helpful information for a decision on which attributes to improve. This allows the selection of those attributes that are identified as being in need of improvement by many methods simultaneously, as discussed above. In conclusion, this study contributes to providing key service quality attributes to support hotels' service quality. Hotel operators should become conscious of the service items located in the unimportant classification. It might make sense to suggest that spending money or adding services that belong to the unimportant category may not be an effective way to please the customers. Those attributes located in the important category increase the satisfaction level of customers.

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▶ Satisfaction

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## Hours of Work

▶ Work Time

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## Hours Required to Meet Basic Needs at Minimum Wage

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### Definition

*Hours required to meet basic needs at minimum wage* is an indicator that examines how many hours a worker while earning the minimum wage must work to meet basic needs and achieve a decent quality of life and well-being.

### Description

For many reasons, the minimum wage in many places does not provide adequate income for a person to meet their own ▶ basic needs or the basic needs of their families. Hence, the indicator, *Hours required to meet basic needs at minimum wage*, reveals the degree of (in) adequacy of the minimum wage in a certain context. This indicator provides insight into how the context of employment shapes the ▶ quality of life for employees and their families, either across different contexts or time periods.

There is growing concern about the expansion in the number of precarious and contingent jobs in advanced industrialized countries. These jobs frequently feature part-time and inconsistent work hours, low-wages, weak or nonexistent benefits, and limited job security. Despite working in the formal economy, an increasing number of people qualify as working poor, and do not earn enough to meet their own or family's basic needs. People working precarious and contingent jobs often must combine several jobs to earn enough income to meet basic needs. It should be noted that the number of hours required to meet basic needs at minimum wage is also directly affected by the context of government taxes, transfers, and other investments that could be considered part of a "social wage" (Zuberi, 2006).

What constitutes basic needs remains not only a contested and open question, but also clearly varies significantly by geographic location. Some of the major components of "basic needs" clearly include shelter, food, clothing, and access to transportation. In their important book *Making Ends Meet*, Kathryn Edin and Laura Lein (1997) present evidence that similar African-American single parents were worse off if they were formally employed, in part due to the associated costs of employment from transit, childcare, and clothing. The requirements also vary by family size, with a family of five requiring more resources to meet basic needs than a single individual. Access to benefits and social supports also affects what resources are required; for example, the province of Quebec provides universal $7 per day early childhood education to all families, dramatically reducing resources required for childcare by working families with preschool aged children compared to their other Canadian counterparts. What constitutes basic needs might also vary by country, especially if social inclusion is important.

In the Canadian context, a full-time employee earning minimum wage ($10.25 per hour) in the provinces of Ontario and British Columbia would earn approximately $410 per week. Teams of scholars, welfare policy specialists, and advocates have met, deliberated, and determined what constitutes a “living wage” or the income required for a family to live with a decent degree of economic security, in several cities across Canada. Based on the 2011 calculation, the living wage rate of $18.77 for metro-Vancouver translates into weekly earnings of $726.80 per week before taxes. Hence, in order for a minimum wage worker to earn $726.80, a person would have to work 71 h per week. Based on the CCPA living wage rate of $16.60 per hour for a resident of metropolitan Toronto in 2008, a person would have to earn $664.00 per week. At the minimum wage of $10.25 per hour, a person would have to work 64.78 h per week to earn a living wage. One important caveat is that government- or employer-provided subsidies and benefits, whether free or low-cost childcare or transit passes or meals, can reduce the number of hours (or hourly wage) required to meet basic needs.

While some could argue that the living wage provides more income than required to strictly meet basic needs, others might argue it falls far short of truly meeting basic needs as it fails to allow for extensive retirement savings, which are increasingly not provided by employers.

Yet overall the growing gap between the minimum wage and living wage reveals the consequences of declining economic fortunes of low-income workers in the current neoliberal era. In advanced industrialized countries, lower-skilled workers have lost ground as a result of stagnating minimum wages (despite recent increases, they lag far behind inflation adjusted levels from the mid-1970s), declining unionization, and increasing education premium in an era when the cost of most basic needs has increased dramatically (Western & Rosenfeld, 2011; Wilson, 1996).

## Discussion

The *hours required to meet basic needs at minimum wage* is one of several measurement tools that allow us to understand the adequacy of formal employment for quality of life and well-being. As a measure, its strength is the ease of comparability across time periods or different contexts, including regions or countries. Its weakness is that it depends on a subjective and contested definition of what constitutes basic needs. In a neoliberal era characterized by a rapid expansion of precarious and contingent employment, we see a growth in the number of *hours required to meet basic needs* to well over 40 h per week in many Canadian and American cities, which reflects the declining purchasing power of the minimum wage and growing working poverty. As formal employment for lower-skilled workers increasingly fails to provide adequate resources for a decent quality of life, the role of government transfers and benefits becomes more important.

## Cross-References

- ▶ Basic Needs
- ▶ Minimum Wages

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## House Design and Quality of Life in Germany

▶ Living Conditions and Well-Being Using German Socio-Economic Panel

## House Facilities

▶ Living Conditions and Well-Being Using German Socio-Economic Panel

## House Size

▶ Dwelling Size

## House Size and Quality of Life in Germany

▶ Living Conditions and Well-Being Using German Socio-Economic Panel

## Household Composition

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### Synonyms

Domestic establishment; Family unit

### Definition

Household composition is determined by the people living together and their relationships to one another. The term household refers to all individuals who live in the same dwelling, who may or may not be related by blood or marriage. A household is distinct from the less inclusive category of family.

### Description

Household composition is determined by the people living together and their relationships to one another. The composition of the household determines a person's household size. A household consists of all the people who occupy a housing unit, and it comprises either one person living alone or a group of people living (or staying temporarily) at the same address, with common housekeeping, who either share at least one meal a day or share common living accommodation (i.e., a living room or sitting room). Resident domestic servants are included. The term household refers to all individuals who live in the same dwelling, who may or may not be related by blood or marriage.

Households may contain one or two or more nuclear families within them but also household members other than members of the nuclear family, such as more distant relatives, friends, foster children, lodgers, flatmates, or long-stay guests or visitors. A person living alone in a housing unit, or a group of unrelated people sharing a housing unit such as partners or roomers, is also counted as a household. The count of households excludes group quarters (e.g., college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, and workers' dormitories) (Hobbs 2005).

A household is distinct from the less inclusive category of family. A family is defined as either a married or cohabiting couple on their own, with their never-married children who have no children of their own, or lone parents with similar such children. Members of a family are related by blood, adoption, or marriage, whereas members of a household are not necessarily related by blood or marriage. For much of the twentieth century, census data did not distinguish sharply between household and family, although the distinction has been much sharper since the sixties (Ruggles and Brower 2003), and is usually now made in major surveys.

Household types are defined with reference to the family nucleus. The family nucleus is defined as a partnered couple (married or cohabiting) with or without (adopted) children or a sole parent with one or more (adopted) children. Parents do not necessarily concern the biological father and mother but can also concern stepparents (e.g., the partner of a biological parent). Basically, household types are categorized into (OECD 2012):

- *Couple families* of married and cohabiting adults of the opposite sex, either with or without children. Couple families (with or without children) are clearly the most frequent type of household across countries. Nevertheless, their relative proportion varies considerably across the OECD from about 50 % of all households in Denmark, Finland, Japan, and the Slovak Republic to almost 73 % in Korea where this proportion is far higher than the OECD average (58 %).
- *Single-person households*. The proportion of single-person households is affected by both the propensity of young adults to leave the parental home and the tendency of elderly to live with their children or enter a house for the elderly (or other institution). Single-person households constitute at least 35 % of households in Denmark, Finland, Germany, Norway, and Switzerland. By contrast, this proportion is less than 20 % in Greece, Portugal, or Slovenia.
- *Sole-parent families*. At about 10 % of all households, sole-parent families constitute a significant minority of households. There is, however, considerable cross-national variation with sole-parent families constituting around 5 % of households in Denmark but 16 % of households in Canada.

Finally, one distinguishes "*other private households*," which include households with either several cohabiting members or with members of two or more families sharing the same dwelling. Households with three cohabiting generations of related people – "extended families" of grandparents, parents, and children – are included in this category.

Nowadays, the household is the main basic unit of analysis in many social, microeconomic, and government models since it represents the "the basic residential unit in which economic production, consumption, inheritance, child rearing, and shelter are organized and carried out."

## Cross-References

- ▶ Divisions of Household Labor
- ▶ Family Structure
- ▶ Household Expenditure
- ▶ Household Income and Wealth
- ▶ Household Panel Comparability Project

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# Household Disposable Personal Income

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## Synonyms

HDPI

## Definition

HDPI is the amount of money left in a household after income tax and national insurance contributions have been paid; this available money can be used for consumption and saving. HDPI is calculated then as personal income less personal income tax payments.

**Household Disposable Personal Income, Table 1** Net and gross national disposable income, 2009 (purchasing power standard per inhabitant)

| | Net national disposable income | Gross national disposable income |
|---|---|---|
| European Union (15 countries) | 21,700 | 25,600 |
| Euro area (13 countries) | 21,200 | 25,300 |
| Euro area (12 countries) | 21,300 | 25,300 |
| Belgium | 22,500 | 27,200 |
| Bulgaria | 8,900 | 10,400 |
| Czech Republic | 14,500 | 17,900 |
| Denmark | 23,500 | 28,300 |
| Germany (including former GDR from 1991) | 23,200 | 27,400 |
| Estonia | 12,400 | 14,700 |
| Ireland | 21,600 | 24,300 |
| Greece | 18,200 (p) | 21,400 (p) |
| Spain | 19,400 | 23,500 |
| France | 21,500 | 25,200 |
| Italy | 19,600 | 23,800 |
| Cyprus | 20,100 | 22,500 |
| Latvia | 11,000 | 13,400 |
| Lithuania | 11,400 | 13,400 |
| Hungary | 12,000 | 14,400 |
| Netherlands | 24,800 | 29,600 |
| Austria | 23,900 | 28,700 |
| Portugal | 15,000 (p) | 18,300 (p) |
| Romania | 11,100 | . |
| Slovenia | 16,900 | 20,200 |
| Slovakia | 13,500 | 16,800 |
| Finland | 22,200 | 26,700 |
| Sweden | 24,100 | 28,100 |
| United Kingdom | 23,600 | 26,600 |
| Norway | 35,100 | 41,300 |
| Switzerland | 28,800 (p) | 34,900 (p) |

Source: Eurostat
*p* provisional value

## Description

HDPI is one of the key economic indicators used to gauge the overall state of an economy, and it is also used to gauge households' rate of savings and spending. Further, HDPI is a good indicator of the level of prosperity in a region or country and the most common gauge for quality of life used especially for economist (Kenny, 2005).

The difference between HDPI and GDP is that the latter is a measure of the production generated by individuals within a country or region, while the former is an estimate of the income received by individuals residing in that region, once the central government transfers have been made. In other words, the data on GDP is not a good reflection of the level of prosperity in the regions because it reproduces the portion of generated production that is captured by individuals, and so it is not affected by the sectoral composition of production. A typical example of the differences between GDP and income is the production of energy, a sector with high apparent productivity (GDP per worker), but the income that finally leave this sector in a region is quite low (Royuela & García, 2010).

Table 1 shows net national disposable and gross national disposable income both per inhabitant for some European countries.

## Cross-References

- ▶ Consumption
- ▶ GDP Growth
- ▶ Personal Income, Satisfaction with
- ▶ Quality of Life

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# Household Equivalence Scale

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## Synonyms

Adult equivalence scale

## Definition

A household equivalence scale allows for transforming the income in an *n*-member household into an equivalent one-adult-member household. This is necessary for well-being comparisons across households with different number of members.

The approach presumes that income is a relevant source for well-being, and the scale is crucial in the study of income poverty and income distribution. The scale looks for providing an answer to the following question: How much income a household with *n*-members would need to have the well-being of a one-adult-member household living with an income equal to *Y*?

The scale can be modified to address more complex questions that distinguish for different household arrangements, for example: How much income a household with *n*-adult and *m*-children members would need to have the well-being of a one-adult-member household living with an income equal to *Y*?

## Description

How much household income does a member of a family of three adults need to enjoy the same well-being of a person living alone on a US$ 2,000 monthly income? Does a member of a family of four adults living on a monthly household income of US$ 4,000 enjoy the same well-being of a member of a family of two adults living on a monthly household income of US$ 2,000? What equivalent one-adult-household income can be attributed to each person in a family of five members with a monthly household income of US$ 10,000?

Economists have been concerned with these questions as a consequence of their presumption that income is a crucial variable in the generation of well-being and of the nature of the family as an institution where economic resources are usually pooled up and shared by all household members (Vogel, 2003).

The presumption of income being an important variable in the determination of people's well-being is rarely questioned in economics. It is clear that household equivalence scales would be of little importance if the relationship is shown to be weak (Rojas, 2011).

As an institution, the family does imply an intra-household division of labor, where some members may specialize in the generation of income while other members place their effort in other activities such as taking care of the children or of the elder, studying, or even traveling and relaxing. The income generated by some of the family members is usually pooled up, and all family members do have access to its benefits. Thus, income is a household-level variable, while well-being is a personal-level variable. In consequence, economists face the problem of constructing equivalent incomes across households with different numbers of members in order to approximate the well-being of each household member and to make well-being comparisons across persons on the basis of their income.

In spite of the importance of equivalence scales, there is little theoretical guidance on their estimation (Blundell, Preston, & Walker, 1994; Deaton, 1999; Slesnick, 1998).

Different approaches have been followed to construct household equivalence scales: The political approach, where the equivalence scale is defined by parliamentary or civil servants on the basis of its intuitive appeal and some nutritional considerations. The micro-modeling approach, where scales are constructed on the basis of spending patterns, and well-being levels are approximated by spending variables such as food share and adult consumption (Deaton & Muellbauer, 1986). The demand-systems approach, where the welfare level is approximated through the use of indirect measures of the expenditure function. The utility function in the model determines demand equations that can be estimated and from which welfare conclusions can be obtained (Lewbel, 1989, 1997). These approaches have been criticized because of their presumption that the observed variables used in the analyses are closely related to people's well-being (Pollak & Wales, 1979a, b).

In practice, most economists are used to following very simple and ad hoc methodologies to address such a crucial issue. The household per capita income and the Oxford-scale – also known as OECD – methodologies are commonly used. The household per capita income is a simple methodology, and it consists in assuming that an $n$-member household does need an income of $nY$ to ensure each member a well-being similar to that hold by a single person living alone on an income of $Y$. In other words, if the number of family members doubles, it would be necessary to double the household income in order to keep each member's well-being constant. Hence,

$$Y_{eqn=1} = \frac{Y_{household}}{n} \tag{1}$$

where

$Y_{eqn=1}$ corresponds to the equivalent income for a single-person household

$Y_{household}$ corresponds to the household income

$n$ corresponds to the number of members of the household

Even though this methodology is widely used, most economists agree that there may be size economies within households due to shared consumption and some degree of non-rivalry in the use of durable goods within the household. In consequence, it is presumed that an additional person in the household does imply a lower economic burden with respects to the previous one. Thus, it is expected for the required income to keep constant the well-being of a person to increase at a decreasing rate as the number of household members goes up (Vermeulen, 2000). In order to allow for size economies within the household, the Oxford-scale methodology differentiates between adult and non-adult members. The first adult is weighted by 1, while additional adults are weighted by 0.7, and any additional non-adult member is weighted by 0.5. Hence,

$$Y_{eqn=1} = \frac{Y_{household}}{(1 + ((n_A - 1) * 0.7) + (n_K * 0.5))} \tag{2}$$

where

$n_A$ corresponds to the number of adult members in the household

$n_K$ corresponds to the number of non-adult members in the household

all other variables in Eq. (2) have been previously defined

During the last years, a subjective well-being approach has been used to construct household equivalence scales. The well-being for the construction of equivalence scales is approximated by a person's declared life satisfaction or economic satisfaction (Kapteyn & van Praag, 1976; van Praag & van der Sar, 1988; van Praag & Ferrer-i-Carbonell, 2004; Rojas, 2007).

Suppose that a person's well-being depends on his/her household income, on his/her household size, and on other personal characteristics. Let us define a concave well-being function in household income and household size:

$$WB = \alpha_0 + \alpha_Y lnY + \alpha_n n + \sum_{i=1}^{m} \gamma_i X_i \tag{3}$$

where

$WB$ corresponds to person's well-being as measured by a subjective well-being variable (it could be happiness, life satisfaction, or economic satisfaction)

$lnY$ logarithm of household income

$n$ number of household members (household-income dependents)

$X_i$ sociodemographic variable $i$, such as gender, education, age, and civil status

$\alpha_0$, $\alpha_Y$, $\alpha_n$, and $\gamma_i$ are parameters to be econometrically estimated

After some mathematical manipulation, it can be shown that the equivalent income can be computed as (Rojas, 2007):

$$Y_{eqn=1} = \frac{Y_{household}}{n^{-\frac{\alpha_n}{\alpha_Y}}} \tag{4}$$

The econometric estimation of Eq. (3) provides the estimated values of $\alpha_Y$ and $\alpha_n$. It is then possible to compute a sound equivalence scale that is based on a good proxy for well-being. Using data from Mexico, Rojas (2007) shows that the household per capita income and the Oxford-scale methodologies underestimate the importance of size economies within the household. This underestimation does imply that the household per capita and the Oxford-scale methodologies overestimate poverty rates in the country.

The subjective well-being approach to construct household equivalence scales is well sounded since it is based on a good proxy for well-being rather than on presumption or ad hoc assumptions. It is also flexible enough to allow for consideration of different household arrangements that incorporate information about the number of members as well as their gender and age (Rojas, 2007). In addition, the approach allows for constructing scales which are country – and even region – specific; hence, it does not need to assume universality across countries and institutional arrangements.

Furthermore, the subjective well-being approach to construct household equivalence scales allows for studying intra-household arrangements which define the intra-household distribution of the relevant economic resources for attaining well-being. For example, it could be that all family members do have an equal access to the well-being benefits from these economic resources (communitarian theory of the family). It could also be that some members do have a privileged access to the pooled-up resources due to their bargaining power (e.g., being the main breadwinner) (cooperative bargaining theory of the family). It could also be that some family members are willing to sacrifice their access on the benefit of other members (e.g., parents sacrificing on behalf of their children) (altruistic theory of the family) (Rojas, 2006, 2010).

## Summary

Household equivalence scales are needed when personal well-being comparisons across members of different families are made on the basis of their household income. Although different approaches do exist to construct these equivalence scales, it has been common practice to relay on ad hoc criteria and on strong well-being assumptions. The using of the subjective well-being approach provides a sound and flexible methodology to construct household equivalence.

## Cross-References

- ▶ Child and Family Well-being
- ▶ Communitarianism
- ▶ Family Income and Wealth
- ▶ Household Composition

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# Household Expenditure

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## Synonyms

Consumer expenditure; Consumer spending; Household spending

## Definition

A measure, usually in present value currency terms, of the quantity of money spent by a household over a defined period of time, on all purchases of goods and services. Expenditures can be described as all transaction costs, including excise and sales taxes, of all goods and services acquired during a period of time. This excludes business expenses or installment payments as the full cost of each purchase is often recorded at the time of acquisition (eliminating the need to total each installment payment over time) (BEA; BLS, 2011; ICPSR, 2011). Household expenditure can also be measured in terms of the percentage of a household's income spent on goods and services (as opposed to the percentage saved and spending using debt).

## Description

Household expenditure measures the total amount of money that a household spends on goods and services. While the measure is often taken in terms of the total amount of money spent on various goods and services, it is most meaningfully used as a comparison to other descriptive aspects of the household such as size, income, age, and level of expenditure by type of goods or services (e.g., food, housing, apparel, transportation, health care, investments, and other expenditures) (BLS, 2011; U. S. Census, 2011). Each of these comparative measurements reveals a more in-depth picture of the households from which data was collected. For example, a household spending more than 30 % of its annual gross income on housing would qualify, in many locations, as having a housing burden.

Household expenditure data is collected by national census agencies, as well as by other national government departments that are tasked with measuring labor, statistics, or economic trends (e.g., the United States Bureau of Labor Statistics, a division of the US Department of Labor). Researchers ask samples of households to report their spending habits over a period of time. These data are then added to the historical data series to demonstrate spending trends and rates of change. As these data can be analyzed in comparison to other household-level variables, they are also used in calculating and analyzing macro- and microeconomic trends such as gross domestic product GDP) and the consumer price index (CPI). GDP measures the total amount of goods and services produced (or the total of all expenditures made) in a given country during a specified period. CPI measures the prices of a defined group of goods and services and observes the trends in their prices over time. Both GDP and CPI are indicators of the economic health of a region or country and have been the subject of the lion's share of research efforts (BLS, 2011). Beyond GDP and CPI, household expenditure has been identified as being correlated with, and in some cases predictive of, consumer confidence (Bram & Ludvigson, 1998).

With respect to quality of life metrics, household expenditure research seeks to measure expenditures on necessity goods, goods that are necessary for daily life such as food, water, clothing, shelter, and energy. Necessity goods are generally analogous to physiological needs, the base of Maslow's hierarchy of needs. Maslow argued that all individuals require basic physiological goods for survival. Other needs are irrelevant if the physiological needs go unmet for long enough to cause debilitation or death (Maslow, 1943; Taylor, Funk, & Clark, 2006).

The relationship of household expenditure on necessity goods to the total amount of household income can describe the household's level of poverty or total cost burden. The US Census Bureau describes varying levels of poverty thresholds based on the size and age composition of a household. Broadly speaking, if a family earns 30 % or less of the area median family income (a statistic published by the Department of Housing and Urban Development), they tend to fall close to or meet the poverty threshold (Koebel & Renneckar, 2003). As the price elasticity of necessity goods is low, constantly monitoring the price of necessity goods in relation to real incomes and income growth of low-income households is critical (Koebel & Renneckar). Further research in this area should continue to focus on issues of poverty and of cost burden for low-income consumers. Research should also explore household expenditure in the context of sustainability policies, natural resource conservation policies, and green products.

Additional quality of life research focuses on comparing household characteristics such as income, size, age, sex, and household location to expenditure (e.g., studies of women's spending habits in developing nations) (World Bank). This vein of research seeks to uncover predictive factors for household expenditure – not simply reporting the volume of transactions. For example, the United Nations weaves household expenditure data into its multi-item development index. The human development index and reports measure the environments in which people live and rank them according to their ability to grow individual and household choices relating to quality of life (UN, 2011).

## Cross-References

- ▶ Consumer Price Index
- ▶ Gross Domestic Product (GDP) and Happiness
- ▶ Maslow's Hierarchy of Needs
- ▶ Poverty

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## Household Food Security

▶ Food Security

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## Household Income and Wealth

▶ Family Income and Wealth

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## Household Income, Satisfaction with

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### Definition

"Satisfaction with household income" is a life-domain specific, cognitive facet of ▶ perceived quality of life which refers to the income situation of a person's household.

### Description

Income satisfaction is an assessment of the individual income situation of one's household. Household income, particularly ▶ household disposable personal income, can be regarded as one of the central factors affecting material well-being, since it determines an individual's command over resources and thus the possibilities he or she has to consume goods and services. "Satisfaction with household income" relates to the perception of this specific aspect of one's quality of life. It is a result of a process of assessing the aggregated income from all income sources of the members of a household. Central mechanisms of the evaluation process are social comparison and self-comparison. Comparisons result in specific income aspirations for one's own household with which the actual household income is compared.

If the actual income does not meet one's income aspirations, a feeling of relative deprivation together with low-income satisfaction will be the result. On the other hand, a positive ratio of actual income to income aspiration will go hand in hand with higher income satisfaction. Particularly for wealthier industrialized countries, where people's basic needs are being met, relative income is more important than absolute income for people considering their position in the income distribution (D'Ambrosio & Frick, 2007; Michalos, 1980, 1986). In poor countries, the effect of income on life satisfaction is stronger than in wealthy countries. Despite poor material conditions, income evaluations may even be positive. The paradox represented by "happy poor people" is attributed to learned helplessness as well as to the mechanisms of adaption to even very unfavorable objective living conditions occurring over a longer period of time (Argyle, 1999). Nevertheless, social comparison is of particular importance for one's subjective well-being. Among the factors "need", "personality", and "social comparison", the last-named has the most significant effect on an individual's income satisfaction (Schyns, 2001).

Another paradox is the existence of "unhappy rich persons" that can be explained as resulting from unrealistic income aspirations. Income aspirations change over the life course. In general, income expectations seem to decline over the life course. Thus, elderly people tend to be more satisfied financially than younger people, a fact which can only partly be explained by the accumulation of assets. A constraint has to be made with respect to low-income households. Especially poor old people have very few assets that could be taken into account for the assessment of their financial situation (Hansen, Slagsvold, & Moum, 2008). A very central research topic addresses the reference as basis for social comparisons. An open question remains what groups people compare themselves with and what the result of such comparisons is (Becchetti, Corrado, & Rossetti, 2011; Oshio, Sano, & Kobayashi, 2010). The income level in a particular neighborhood seems to be relevant (Clark, Kristensen, & Westergård-Nielsen, 2008). The level of satisfaction with household income is not independent of income dispersion. There is evidence that nations as well as social groups with high income inequality are less satisfied with their household income than are more equal groups. A possible explanation is that a more equal income distribution within a social group or a country provides people with less opportunity for making unfavorable comparisons than does a more unequal income distribution. Income sources also seem to be relevant: people in households that receive private or public transfers, especially unemployment benefits, are usually less satisfied with their household income (Labeaga, Molina, & Navarro, 2007). The distribution of personal income within households affects income satisfaction, too. From an intra-household perspective, a greater share of individual income from the total household income is likely to increase people's financial satisfaction (Ahn, Ateca, & Ugidos, 2006; Ahn, Ateca, & Ugidos, 2007).

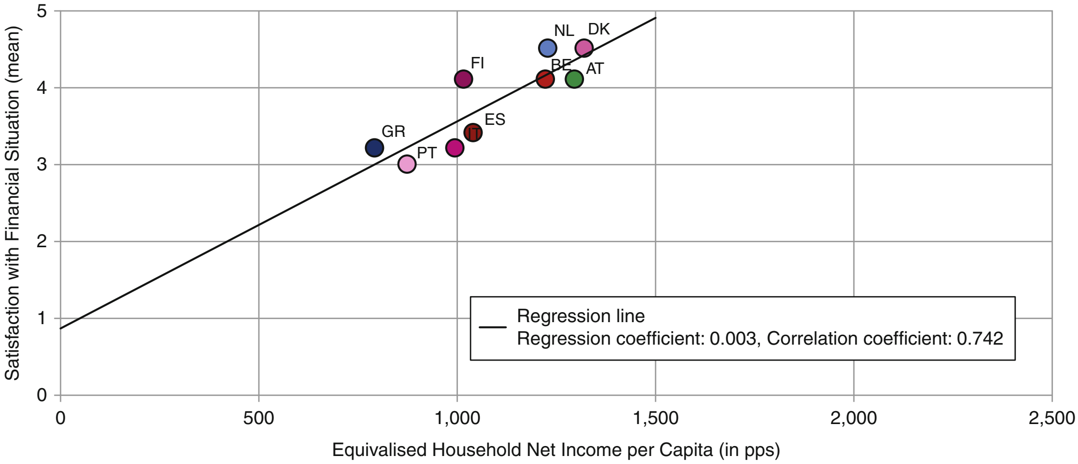
Income aspirations and satisfaction are also driven by hedonic adaption. According to the ► set point theory, people have a stable satisfaction level that is based on genetic factors and early socialization. Substantial changes in household income may indeed influence an individual's current subjective well-being. Adaption theory, however, assumes in this case only a temporary influence. Consequently, rising income goes hand in hand with a temporary increase in satisfaction, while declining income is accompanied by a drop in the level of satisfaction. Over time people revert to their baseline level of general subjective well-being as their income aspirations adapt to the objective situation. The large effect of social comparison on satisfaction with household income mitigates the adaption effect. Thus, both income level and income changes are taken into account in the satisfaction evaluation (Delaney, Newman, & Nolan, 2006; Stutzer, 2004).

In the literature on income and subjective well-being, income satisfaction is not always clearly distinguished from general life satisfaction (Van Praag & Ferrer-i-Carbonell, 2003). Although income satisfaction is closely correlated with general life satisfaction, the latter also includes the evaluation of many other life domains and is thus less directly responsive to the income situation of one's household or changes in it. The standards of comparison differ for different life domains as well as for life as a whole (Land, Michalos, & Sirgy, 2011). The relation between income and income satisfaction is thus stronger than that between income and life satisfaction.

Income satisfaction is not only the result of a process of evaluating the material situation of households but is also influenced by an individual's general subjective well-being (Schyns, 2001). The tendency to experience things in a more positive or in a more negative way seems to influence the assessment of one's household income just as much. Happy persons tend to be more satisfied with their actual household income than unhappy persons. Another research field for the use of income assessments is the analysis of income inequality: Satisfaction with household income is used to estimate equivalence scales for taking the varying composition of households into account. The derived economies of scale are greater than those in most expert scales but lower than those based on income evaluation questions (Schwarze, 2003).

## Measurement

Satisfaction with household income is usually measured on a ► Likert scale using responses to a single survey question. To avoid biased



**Household Income, Satisfaction with, Fig. 1** 2001: Equivalised Household Net Income per Capita (total) vs. Satisfaction with Financial Situation (total) (Source: European System of Social Indicators)

answers, the attempt is made to avoid focusing the attention of a respondent too much on income evaluation. This is mostly done by including the question of income satisfaction in a battery of other domain satisfaction questions (Van Praag & Ferrer-i-Carbonell, 2003). Satisfaction with household income is a general evaluation of the financial situation of one's household. Measures focusing on financial pressure or perceived poverty can be found among the so-called deprivation indicators. The ▶ European System of Social Indicators provides aggregate indicators of satisfaction with household income (Fig. 1) based on international surveys. On the national level, results show a clear positive relationship between income and income satisfaction.

## Cross-References

- ▶ Deprivation
- ▶ European Quality of Life Survey (EQLS)
- ▶ European System of Social Indicators
- ▶ Hedonic Adaptation
- ▶ Household Disposable Personal Income
- ▶ Household Equivalence Scale
- ▶ Income Evaluation Question
- ▶ Income Influence on Satisfaction/Happiness
- ▶ Likert Scale
- ▶ Perceived Quality of Life
- ▶ Personal Income, Satisfaction with
- ▶ Satisfaction with Life as a Whole
- ▶ Set Point Theory
- ▶ Subjective Income Inequality
- ▶ Subjective Poverty

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# Household Labor

- ▶ Sharing of Household Responsibilities
- ▶ Women's Housework over a Decade

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# Household Panel Comparability Project

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## Synonyms

Harmonizing longitudinal data on households and individuals for cross-national comparisons

## Definition

Social researchers carrying out quantitative comparative studies across countries and time require databases containing harmonized concepts and variables. The aim of the project is the investigation of the information management and technological requirements for comparative longitudinal data analysis and, more specially, the development of instruments for analyzing socioeconomic topics and measures of social cohesion. It facilitates cross-national comparative analysis on policy issues such as labor force participation, income distribution, poverty, and problems of the elderly.

## Description

In last two decades of the last century, research groups in some European countries initiated their own national panel studies for studying social change on household and individual level. Panel data for Europe exist, but access to these data is still difficult, expensive, and/or restricted.

The basic obstacle for microanalytic comparative research on European topics and issues is still the fact that the datasets of the national panels are not directly comparable to one another. Each of the national datasets is organized in a different manner; the variables are not standardized. The situation is that there are no common formats, variable names, or data structure. At that time, cross-national comparison(s) was only feasible by teams which actively involve people from the respective domestic panels. In order to overcome these problems, the international research projects PACO (Panel Comparability: Schaber, Schmaus, & Wagner, 1983)/CHER (Consortium of Household Panels for European Socio-Economic Research: Schaber & Schmaus, 2003) created an international comparative database with various national household panels and the European community household panel (ECHP) within CHER only using ex post harmonization techniques. The harmonization of national panel data was feasible because of common concepts used and a subset of similar variables in the files available. A high degree of data quality was achieved by the fact that harmonization of the variables was actual done by experienced staff from the national panels at their home institutions.

The integration of all panel components into the PACO/CHER database format has been realized by applying two construction principles (Schaber & Schmaus, 1998). Firstly, relevant subsets of variables for selected topics from original panel data were included, and these variables were made comparable by corresponding to a common plan established for defining and recoding variables and are built by using standardized international classifications where available. The principle is – where possible – not to collapse values (e.g., for nationality and professions), not to top code variables (e.g., age or income values), and by making a clear distinction between original values and imputed values replacing missing data (e.g., concerning income), as well as by standardizing missing codes and imputation flags. Furthermore, a clear distinction between gross and net income components was done. Remaining inconsistencies between country data are minimized; problems and deviations are documented.

Secondly, a relational database structure was prepared to support the analysis of the data, by naming the variables in a consistent manner (appropriate for longitudinal data analysis), creating a set of link variables (e.g., links to spouse, father, and mother) assuring the links to the original datasets, ordering variables according to analysis requirements, reducing unnecessary complexities in the original panel files, providing information on household and individual level, and guaranteeing a user-friendly organization in file structures. The complexity of original panel data is reduced to a necessary degree. This means that both databases contain harmonized (or even nearly identical) variables both at the cross-sectional and at the longitudinal level, with identical variable names and labels.

Data quality and problems of standardizing micro data derived from original surveys can only be identified by performing analyses on these products. Furthermore, only the interaction between data production/harmonization and analysis of the data guarantees that the database production is orientated towards the research needs. For these practical reasons, different exemplary data analyses were conducted. These exemplary panel analyses were used to test the technical usability of the database, to improve the user-friendliness where necessary, to detect and remove remaining inconsistencies and errors in the database, and to validate the database by comparing the empirical findings with external statistics.

The data processing techniques for using panel data have been enhanced. Standardized utilities enable the user to retrieve and match the database files more easily. The database structure allows the writing of global analysis programs. Standard analysis programs can be run for different countries and different periods with no need to modify the interface to programs for the statistical packages.

Such a comparative approach results in two databases: PACO (Schmaus & Riebschläger, 1985) contains data for the years 1985–1995 from eight countries, France (Lorraine), Germany, Hungary, Luxembourg, Poland, Spain (Galicia), UK, and USA, while CHER (Birch, Haag, Lefebure, Villeret & Schmaus, 2003) provides data for the years 1994–2001 from the EU countries plus Switzerland, Poland, and Hungary. Information in these files is available (a) for households and individuals on the microlevel, (b) for single years, and (c) as longitudinal information. The databases focus on demographics, e.g., household composition, socioeconomic status, labor force, and income variables, e.g., household disposable personal income. In addition, the PACO/CHER data also include smaller sets of variables on education, health, and housing, e.g., housing tenure. The specific variable set allows analyzing a wide range of topics such as labor force participation rates, poverty, income distribution, income redistribution, and subgroups such as elderly, single-parent families, and self-employed.

Research under these projects has shown that it is possible to make the existing household panel datasets comparable. The approach chosen for PACO/CHER, using highly standardized variables and files, facilitates the analysis of cross-national panel data. The panel data are immediately available for the analysis. The researchers can now start with a completed dataset rather than trying independently to harmonize the smaller subset of variables that is most useful for their research topic, a process that is repetitive and thus expensive and inefficient. They do not need to be familiarized with the data organization of the various country panels. The processing of the comparative database files is easier than analyzing the original panel studies; the pitfalls of misusing data are as far as possible eliminated. The databases support researchers to do within-country comparisons at the same time as cross-national comparisons. Therefore, it will be possible to focus on national uniqueness and cross-national contrasts, as well as on cross-national similarities.

The PACO/CHER databases enable researchers to do truly cross-national research with longitudinal datasets in a user-friendly environment. Each country file is sufficiently anonymized and can therefore be rated as a public or scientific use file. The databases are linked with a collection of macro data and information about Social Security Regulations in individual countries. They are available on a CD-ROM containing data files for analysis package formats of their choice (SPSS, STATA, and SAS) and are distributed to the scientific community under appropriate rules for confidentiality and data protection. The availability of the complete CHER database is restricted due to Eurostat regulations (Eurostat a), which does not allow CHER data parts coming from the ECHP to be disseminated to researchers outside the CHER consortium, but parts coming from national panels are available for the scientific community.

## Cross-References

- ▶ Comparative Analysis
- ▶ Cross-National Comparison(s)
- ▶ Data Analysis
- ▶ Data Quality
- ▶ Health
- ▶ Income Distribution
- ▶ Longitudinal Data Analysis
- ▶ Social Change

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## Household Spending

▶ Household Expenditure

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## Household Tasks

▶ Women's Housework over a Decade

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## Household Work

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### Definition

*Household work* is the unpaid labor time of the members of households in producing services for their own ▶ consumption (or for the benefit of members of other households).

### Description

Household work goes well beyond the everyday concept of "housework." In common parlance, "housework" is seen as the routine chores of running a household – cooking and meal preparation, cleaning, laundry, and shopping – the tasks performed by the traditional role of a "housewife."

In the quest to understand the full magnitude of household work and the continuing and evolving role it has in the organization of society and the major contribution it makes to the quality of life, household work needs to be precisely defined and then accurately measured and quantified.

This measurement requires the establishment of strict definitions of "household work," "household production," and "the household economy." Over the last few decades, these definitions have become fairly well established, and the data required for precise measurement are gradually becoming available.

All the household work we do can be described in terms of just seven categories of final household services:

- Accommodation (shelter, warmth, sleep, and entertainment in a clean safe environment)
- Meals (nutrition, fluids)
- Laundry (clean clothes)
- Care (childcare, disabled care, ▶ elder care)
- Transport (own vehicles)
- For other households (▶ volunteering – formal (organized, indirect) and informal (unorganized, direct))
- ▶ Education (self-education time by household members)

These services are provided within and between households without monetary payment in contrast to these types of services provided by the market that require payment. Similarly, household work is unremunerated and as a result often unrecognized and undervalued.

Households undertake some activities such as shopping, house cleaning, and gardening that are not "final" services but are regarded as ancillary activities undertaken to facilitate the seven final services. Thus, in measuring (counting and valuing) the production of household services, it is only necessary to count and value the final services. For example, when meals are purchased from a restaurant, there are not separate charges for the shopping and cleaning involved – there is just a charge for the meal.

## Household Work, Household Production, and the Household Economy

*Household work* is the unpaid labor time of the members of households in producing services for their own ▶ consumption (or for the benefit of members of other households).

*Household production* is the production and delivery without monetary payment of accommodation, meals, care, transport, clean clothes, ▶ education, and ▶ volunteering (unpaid services for other households).

These services use household work and household capital – the housing, equipment, and vehicles owned by households. This productive system can be called the *household economy* in distinction from the *market economy* where the labor and capital used are financially remunerated.

Regardless of the efficiency of the production and distribution of goods and services provided by the market economy, it is highly likely that the unpaid household work and production of the household economy will continue to play a fundamental role in the production of services essential to maintain and increase our ▶ quality of life.

## The Long-Term Vitality of Household Work and Production

Perhaps the major factor ensuring this vitality is that households are *better than the business and public sectors* in providing people with the majority of final services – housing, meals, clean clothes, care, and personal transport – with the characteristics, attributes, and qualities of these services that individual household members most prefer. Households are better than the market at individualizing and delivering these services how, when, and where they are needed and desired with comparatively lower costs in terms of time and money.

However, the market and public sectors are *better than households* in providing the intermediate inputs of energy, materials and the capital equipment, technology, and infrastructure needed for households to use in providing the final services.

In addition, increasing efficiency in the market economy in terms of labor time means households have more time not only for ▶ leisure but also for producing and delivering final household services.

## Measuring Household Work and Production

Work (labor time) is an essential input to the production of household services that maintain and promote the ▶ quality of life. This work is the use of ▶ human capital resources as an input to the household production process.

The work input time can be measured in hours and minutes, both at the individual and the household level and at the local, regional, national, and even world levels. Modern sample time use survey techniques have been used extensively in the last few decades to provide these statistical measures in an increasing number of countries, both developed and developing (Ironmonger, 2008).

Time is also needed for the consumption or use of these services. Similarly sample surveys can be used to measure the consumption time, the output hours.

Physical capital (land, dwellings, equipment, and vehicles) is also used to produce household services. Although these items are rented from the market, at the time they are used in household production, they are very often owned by households.

## Monetary Value of Both Labor and Capital Inputs

The inputs of these capital items could also be measured in days and hours of use (e.g., the days dwellings are occupied or the hours vehicles are driven). However, adding up the input hours for all the different varieties of physical capital would make little sense. What does make sense is to add up all the *monetary rental values of the physical capital* owned by households and used in household production. This can then be added to the *monetary value of the labor* used to give an aggregate total monetary *value added* by household production on a monthly, quarterly, or annual basis.

Estimates of the value added by household work and production provide the basic components for regular "satellite" accounts for the household economy on a comparable basis to the existing "core" national accounts for the market and public sectors of the total economy.

### Satellite Accounts of Household Production

In 1993 the United Nations System of National Accounts did recognize that household production was an *economic* activity and thus within the "general" economic production boundary. It was recommended that national statistical offices should prepare estimates of nonmarket household production within a set of satellite accounts. Recommendations of the methods of preparing satellite accounts of household production have been considered and adopted by Eurostat, the statistical organization for the European Community (Eurostat, 2003).

One of the major recommendations of the recent *Report by the Commission on the Measurement of Economic Performance and Social Progress* was that to improve objective measurements of the quality of life, income measures should be broadened to cover nonmarket household production through "comprehensive and periodic accounts of household activity as satellites to the core national accounts" (Stiglitz, Sen & Fitoussi, 2011: 40).

The national accounts statisticians already include an imputed rental value of owner-occupied dwellings in the estimates of ▶ *Gross Domestic Product* (GDP). This imputation needs to be extended to all the other furnishings, equipment, and vehicles owned by households, and the whole included in estimates of *Gross Household Product* (GHP). If all housing and other capital used by households were rented from the market, there would be no need for the imputation of a rental value, and GHP would consist just of the value of unpaid household work.

Deducting the rental value of owner-occupied housing from GDP gives a new concept, *Gross Market Product* (GMP). Gross Household Product (GHP) and Gross Market Product (GMP) can be added together without double counting to give a total value of all economic goods and services,' *Gross Economic Product* (GEP).

$$\mathbf{GEP = GHP + GMP}$$

### Earlier Estimates of the Value of Household Production Are Underestimates

In the late twentieth century, many published estimates for a number of industrial countries (including the United States and ▶ Australia) show values of household production approximately in the range 30–60 % of ▶ GDP (INSTRAW, 1995: Table 4.1). Adjusting these estimates for the rental value of owner-occupied housing means that the value of GHP lies in a range some 66–33 % *less* than GMP.

However, more recent and reliable techniques give estimates of the value of household production in ▶ Australia and the United States in the first decade of the twenty-first century and show the magnitude of GHP to be in the range of 22–38 % *greater* than GMP.

### Reasons for the Underestimates

There are several reasons for the underestimates of GHP for the earlier period.

Firstly, many early estimates included only the value of the labor time and did not include the value contributed by household capital equipment, vehicles, and dwellings.

Secondly, in most cases the estimates of childcare were grossly understated as the time use surveys only recorded the "primary" time spent in childcare and ignored the "secondary" time when most childcare is done.

Thirdly, often these estimates did not include all final services provided by households, especially volunteering services to other households and the value of the time household members spend obtaining education.

Fourthly, the valuations did not count the volumes of the outputs of household services (such as the child hours of care, the days of accommodation, the numbers of meals, and the kilometers of personal motorized transport) and then value these volumes at the prices for comparable services provided by the market.

Finally, the imputed value of owner-occupied housing was not included as part of the full (fully furnished, sheets-changed, toilets-cleaned) accommodation services provided by households to themselves. Excluding the rental value of owner-occupied housing reduces GDP by around 10 % in a number of countries. As mentioned before, this adjusted estimate of the market economy can be labelled Gross Market Product (GMP).

Thus, many earlier published estimates of household production are not "output-based estimates" but are *incomplete* "input-based estimates." These have given a false and misleading idea that the measured market economy provides 60–70 % of total economic goods and services.

For example, the International Research and Training Institute for the Advancement of Women (INSTRAW) (1995) showed total household production in a number of developed countries to be predominantly in the range of 30–50 % of current dollar ► GDP. Eisner (1989) calculated for the United States a value of roughly 55 % of ► GDP. More recently, an even larger estimate of 75 % was calculated for ► Australia by Ironmonger (1996, 1997).

## New Estimates of Gross Household Product for United States and Australia

To arrive at an aggregate measure of the total "value added" by the two forms of capital used (human and physical) in household production, we need to value all inputs in monetary units (dollars, pounds sterling, euros, etc.).

Recently, new output-based techniques of valuing household production in monetary units have been developed. The latest estimates show the remarkable fact that the value added in household production is greater than the total value added by market and public production. *The household economy is larger than the market economy.*

In the United States, as a percentage of GEP, GHP ranged from 57 % in 2003 to 55 % in 2007 and in 2009 (Table 1).

**Household Work, Table 1** United States: billions of 2005 dollars 2003–2009

| | 2003 | 2005 | 2007 | 2009 |
|---|---|---|---|---|
| GHP | 14,555 | 14,605 | 14,786 | 14,629 |
| GMP | 10,869 | 11,575 | 12,145 | 11,776 |
| GEP | 25,424 | 26,180 | 26,931 | 26,405 |
| GHP % | 57.2 | 55.8 | 54.9 | 55.4 |

Source: Estimates of the Households Research Unit, Department of Economics, the University of Melbourne

The following table (Table 2) for Australia in 2006 shows that GHP ($1,236 billion) was 58 % of GEP ($2,145 billion).

## The Importance of Unpaid Household Work

We can see from estimates for Australia that household work, the use of human capital, is more important than the use of physical capital in household production; more than 80 % of the value added was from labor (human capital) and less than 20 % was from physical capital.

In market production the proportions were different: 60 % from human capital and 40 % from physical capital.

The table also shows that the monetary value of unpaid household work ($1,067 billion) was greater than the total value of market production ($908 billion) and equal to 50 % of all economic production ($2,145 billion).

It is not surprising that both the quality and the quantity of the physical capital available to and used by households increase as countries develop. Household production is becoming more capital intensive and household work is becoming more productive.

This does not necessarily mean that hours of household work are declining; households may prefer to work the same hours in household production but to produce more and "better" services for the members of their households. Households use their improved productive capabilities to compete with similar services provided by the market economy.

## Subsistence Agriculture

There is some debate as to whether subsistence agriculture (the production of food and fiber by rural households for their own consumption,

**Household Work, Table 2** Australia: labor and capital components of economic production 2006

| | | Input volume | Input value | |
|---|---|---|---|---|
| | | Million hours | $ billion | Percent |
| Household production | Labor | 35,651 | 1,066.5 | 81.4 |
| | Capital | | 169.9 | 18.6 |
| | Total GHP | | 1,236.4 | 100.0 |
| Market production | Labor | 17,675 | 541.5 | 59.6 |
| | Capital | | 366.8 | 40.4 |
| | Total GMP | | 908.3 | 100.0 |
| Economic production | Labor | 53,326 | 1,608.0 | 75.0 |
| | Capital | | 536.7 | 25.0 |
| | Total GEP | | 2,144.7 | 100.0 |

Source: Estimates published in Ironmonger and Soupourmas (2009)

mainly but by no means exclusively, in "developing" countries) be treated as household production.

The United Nations System of National Accounts (SNA) includes this production within the SNA boundary of "market" production arguing that as these commodities are "goods," they could be sold and some proportion probably is sold. The meals produced from the food production are regarded by the SNA as "services" and hence outside the SNA boundary. Household production of rice and chickens is within the SNA boundary; cooked rice and chicken soup are outside, but in "household production."

The trouble with this definition is that the statistical organizations of many, if not most, ▶ developing countries are poorly resourced and are unable to make reliable estimates of the value of subsistence agriculture.

In 1993 the SNA production boundary was enlarged to include wood and water collecting as a market activity on the argument that in many ▶ developing countries these activities take significant amounts of time and that in developed countries water and fuel were usually provided by market or public utilities. Again, few if any ▶ developing countries have the statistical resources to measure these activities to include in the SNA estimates.

## Investment in Physical and Human Capital

A significant proportion of GMP is capital investment in providing equipment, vehicles, buildings, and infrastructure for current and future production of goods and services. The current presentation of the GMP numbers includes the purchases of household furniture, equipment, and vehicles as consumption rather than as investment. Clearly all these items are investment in the *physical capital* used by households in producing household services.

Again, education and health expenditures are also regarded as consumption by the SNA; these should be more usefully regarded as important investments in ▶ *human capital*.

Similarly, a significant proportion of GHP is investment in creating, building, and maintaining ▶ human capital. Childcare and self-education can rightly be counted as investment in ▶ human capital rather than as consumption. Of course even sleeping and eating could be regarded as short-term investment in maintaining ▶ human capital for tomorrow. The boundaries between consumption for the present and investment for the future are arbitrary. These boundaries should be more precisely defined to give statistical measures that have practical uses.

Table 3 shows some illustrative estimates of the significance of this investment time in ▶ Australia in 2006 covering childcare and education.

Hence about 38 *% of household work is involved in developing* ▶ *human capital*; this is more than one quarter of all work (paid and unpaid). Including the work of teachers in formal education (from kindergarten to university) would make this an even higher percentage. Beyond this, perhaps the time that children aged

**Household Work, Table 3** Input work hours: Australia, 2006

| | All households | Per household | Percent of household work | Percent of all work |
|---|---|---|---|---|
| | Million hours/year | Hours per week | % | % |
| Childcare time | 10,974 | 26.5 | 30.8 | 20.6 |
| Education time | 2,622 | 6.3 | 7.4 | 4.9 |
| Total household work | 35,651 | 86.0 | 100.0 | 66.9 |
| Total market work | 17,675 | 42.6 | | 33.1 |
| Total work | 53,326 | 128.6 | | 100.0 |

Source: Estimates published in Ironmonger and Soupourmas (2009)

say 5–14 years spend in formal education (including homework time) should also be included; this would possibly double the total time effort in educating each generation.

## Process Benefits from Household Work

People often dismiss household chores as not being work because they *enjoy* minding children, cooking, or gardening; this ▶ enjoyment is a *process benefit* from the activity which cannot be transferred to another person. One counter to this argument is to say that not all household tasks provide ▶ enjoyment and to ask "How many people enjoy cleaning the toilet?" The point can also be made that, for many people, much of the time spent in *paid* work is enjoyable. The level of ▶ enjoyment of the person working is not the criterion to distinguish between work and ▶ leisure. Meal preparation, *whether in the household or in the restaurant*, is valuable work because of the meals provided, not because of the ▶ pleasure the cook obtains through the act of cooking. The meals are the *outcome benefits* that are transferred to those that eat them.

The convention of our modern SNA metric for the measurement of ▶ economic value ignores the *nontransferable process benefits* that accrue to the person performing the task. This convention for measuring ▶ economic value is to classify an activity as valuable, and to measure the value, according to the *transferable outcome benefits* of the product or service resulting from that activity. This convention for measuring economic value in the System of National Accounts flows from our apparent inability to recognize and measure the value of the process benefits derived from work (and ▶ leisure). It produces a huge void in our picture of the world and creates major difficulties for economics as a practical and useful discipline.

## Summary

Unpaid household work and the unpaid services provided by this work make enormous contributions to the material inputs contributing to the ▶ quality of life throughout every country of the world – developed and developing. There is some evidence that as the world develops the volume and value of household work and household production have grown faster than the volume and value of market work and market production.

In many developed countries, the volume and value of household work and household production now exceed the volume and value of market work and market production. The market economy has a comparative advantage in providing goods (capital equipment, materials, and energy); the household economy has a comparative advantage in providing services (final consumption meals, accommodation, care, laundry, and personal transport).

The two parts of the total economy – the household leg and the market leg – will continue to evolve and to interact, no doubt with some changes in comparative advantage. These will be driven mainly by changes in the technologies used in production and consumption – the invention and introduction of new processes and new commodities. The aim should be always to improve the quality of life.

## Cross-References

▶ Australia, Quality of Life
▶ Caregiving, Family
▶ Consumption
▶ Disabled Persons
▶ Elder Care
▶ Enjoyment
▶ Gross Domestic Product (GDP) and Happiness
▶ Human Capital
▶ Inclusive Education
▶ Leisure
▶ Monetary Measures of Value
▶ Parental Time and Child Well-Being
▶ Pleasure(s)
▶ Quality of Life (QoL)
▶ Time Budget(s)
▶ Volunteering

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# Households in Substandard Living Accommodations

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## Definition

Households are supposed to live in “substandard living accommodations”, if they are in housing conditions that do not meet the ▶ human needs of the residents or that seriously deviate from national or regional standards, thus resulting in a situation marked by ▶ deprivation and ▶ social exclusion or by a deficiency in subjective well-being.

## Description

Adequate housing is an essential condition of people’s well-being in terms of their basic needs and has been adopted as a human right by the United Nations (1948). Deprivation in housing conditions is measured by the absence of facilities that are deemed necessary for maintaining a minimum standard of quality of life. As is also the case with the discussion of ▶ poverty, there are, on the one hand, absolute standards that are a precondition for physical survival and, on the other hand, more relative standards that depend on the wealth of the nation or region under observation.

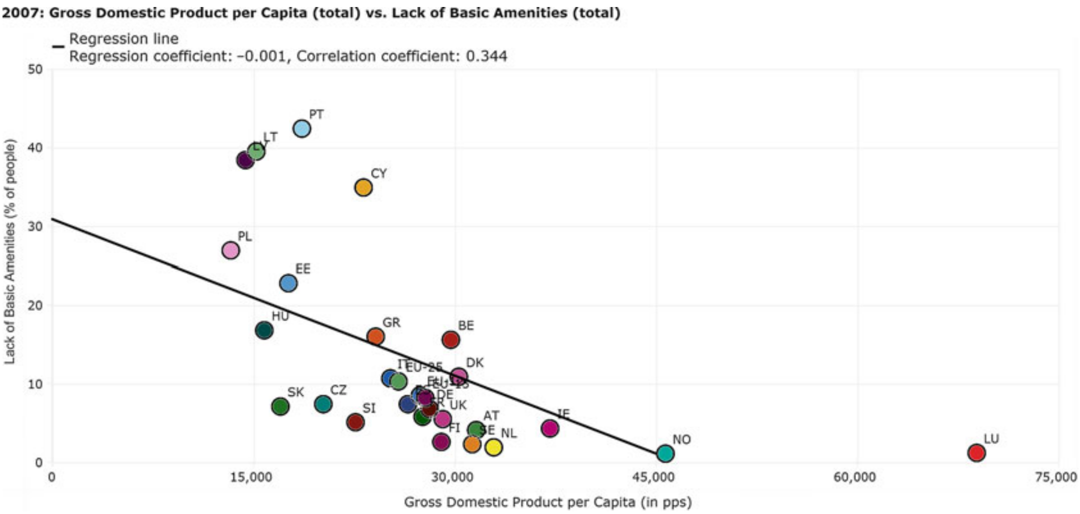
To monitor and improve housing conditions, the United Nations Human Settlements Programme (UN-Habitat) has been given a mandate by the UN General Assembly. Its activities focus on very basic housing conditions such as water supply, sanitation, and energy, particularly in underdeveloped regions (UN-Habitat). One central aim is to provide a minimum standard of accommodation to millions of low-income urban dwellers in less-developed countries. According to UN statistics, the state of the world’s ▶ housing and quality of life is recognized as precarious. About 1.6 billion people live in substandard accommodations and 100 million are homeless (2005), which is seen as a global housing crisis.

In industrialized countries, the perspective adopted for analyzing substandard housing is based on the mean standards in the respective countries and to a much lesser extent on the standards warranted for physical survival. Specific databases have been developed for the USA. The American Housing Survey for the United States gives regular detailed information on the development of the physical conditions in the housing sector (US Census Bureau). Households in substandard housing are not the focus of the related reports but the wealth of data available allows the quantification of the various indicators addressing this issue. The topics included are the condition of the building, equipment failures, and size. Housing characteristics are reported for the poor, the elderly, and other vulnerable groups. In other countries, housing conditions are usually included in comprehensive surveys.

Besides the perspective which focuses on the physical aspects of housing, other aspects of substandard living accommodations are dealt with in the context of poverty and deprivation. Substandard housing is then addressed along with other forms of ▶ deprivation that affect goods and basic life style. Indicators of substandard housing are typically physical attributes, in particular housing space, sanitation, heating, and housing maintenance. This perspective has been taken up by the European Union in a strategy to combat poverty and social exclusion in EU countries. Against this background, the European Community Statistics on Income and Living Conditions (EU-SILC) is used to measure housing conditions by focusing on minimum standards in the context of affordability, income inequality, poverty, and deprivation (Atkinson, Cantillon, Marlier, & Nolan, 2005). National surveys of material deprivation, including housing conditions, have also been conducted on a more or less regular basis for the United Kingdom, France, Germany, the United States, Canada, and Australia (Lelkes & Zólyomi, 2010).

Other approaches place housing conditions in a broader context of research on the overall quality of life and, in doing so, also include the subjective perceptions and evaluations of individuals. The respective subjective assessments of a minimum quality of housing depend on people's aspiration levels with regard to minimum standards, which in turn depend on the objective situation as well as on a comparison with others and one's own past or expected future situation. In this context, not only an overall evaluation of the housing situation but also the assessment of specific aspects of housing as seen against a broader background of larger regions, nations, social classes, and particularly economic inequality is of particular interest (Domanski, Ostrowska, Przybysz, & Romaniuk, 2006). The special modules of the ▶ Eurobarometer Surveys and the ▶ European Quality of Life Surveys have taken up this perspective in their questionnaires in an international context (Eurobarometer special modules). Based on concepts of quality of life, social cohesion, and sustainability, and within a broader perspective of life domains, the ▶ European System of Social Indicators provides aggregate indicators of substandard living accommodations, including the subjective perception of poor housing conditions (Berger-Schmitt & Jankowitsch, 1999; Berger-Schmitt & Noll, 2000).

Substandard housing is obviously correlated with the wealth of countries and predominates in poorer countries. Some Eastern European countries have not yet achieved the standard of an indoor flushing toilet for all households, particularly in rural areas and among lower income groups. While only about 1.7 % of the population in the European Union as a whole is without such toilets, the percentage amounts to 15–20 % in the Baltic States of Eastern Europe. Overcrowded housing can be measured using the common objective indicator of at least one room per person or specific numbers of rooms for different household sizes based on expert judgements. Another possibility to address this phenomenon is to ask for perceived lack of space. This subjective aspect does not vary according to country wealth in the same way as



**Households in Substandard Living Accommodations, Fig. 1** Source: European System of Social Indicators

the objective indicators. The subjective perception of a lack of housing space depends on the objective number of rooms, but it also depends on being young, on living in an urban area, and on belonging to a low-income group. On the basis of a multidimensional index which takes into account the shortage of space, the availability of a bath/shower, and the availability of running hot water, time series show a strong decrease since the 1960s (Noll & Weick, 2009) in the percentage of households who live in substandard accommodations in Germany, from 90 % in 1960 to 5 % in 2008, while showing enormous West-East differences in Europe at the same time (Fig. 1).

## Cross-References

- ▶ Deprivation
- ▶ Eurobarometer
- ▶ European System of Social Indicators
- ▶ European Quality of Life Survey (EQLS)
- ▶ German System of Social Indicators
- ▶ Housing and Quality of Life
- ▶ Human Needs
- ▶ Poverty
- ▶ Social Exclusion

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## Housework

► Sharing of Household Responsibilities

## Housework and Child Care

► Parental Time and Child Well-Being

## Housework Conflict

► Sharing of Household Responsibilities

## Housework Participation Measurement

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### Synonyms

Domestic chores; Domestic labor

### Definition

Housework is the most common form of household work. It is usually referred to as routine domestic chores that are essential to the running of a household. These include cleaning, washing, cooking, and doing the laundry. However, housework is not a well-defined concept. Sometimes, it is also referred to as a nonroutine type of unpaid domestic labor, such as grocery shopping and household repairs and caring work.

In social surveys, housework participation is usually measured in terms of time use. Housework time is regularly collected in large-scale national surveys, including the British Household Panel Survey, the Panel Studies of Income Dynamics, and the German Socio-Economic Panel.

Furthermore, housework time is regularly collected in national time use surveys which are based on the time diary method.

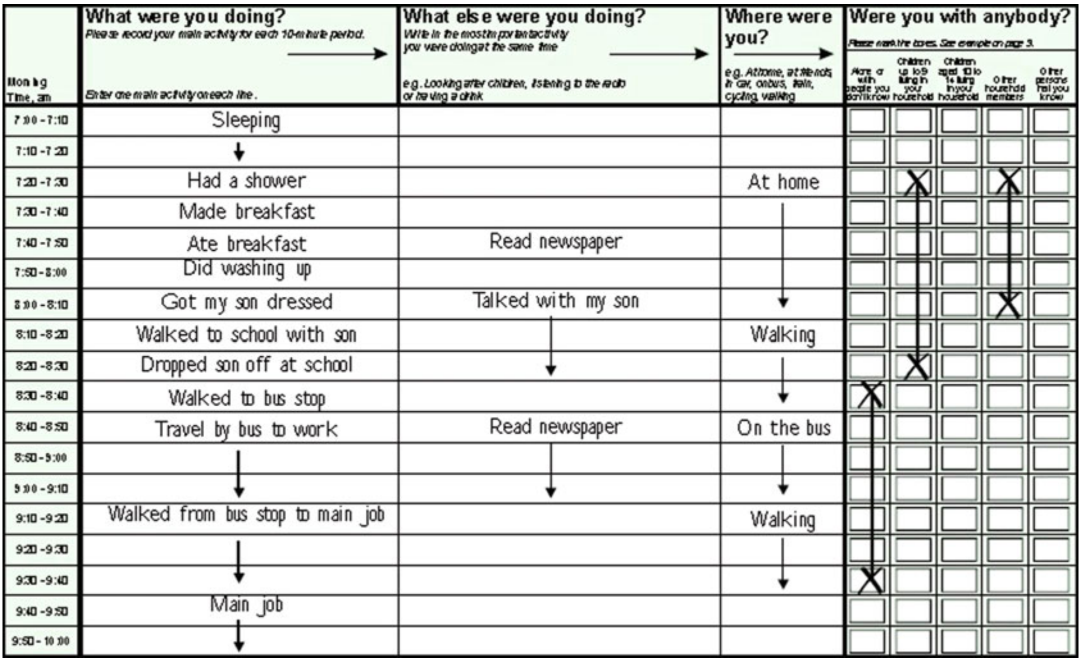
### Description

#### Common Methods of Measuring Housework Time

Housework time is frequently collected in social surveys. Directing questioning in survey interviews, time use diaries, and the experience sampling method are three common instruments for collecting housework time estimates.

Housework time measured by directing questioning in survey interviews is referred to

**Housework Participation Measurement, Table 1** A Time Diary from the Office for National Statistics, UK Time Use Survey 2000



| Morning Time, am | What were you doing?<br>Please record your main activity for each 10-minute period. →<br>Enter one main activity on each line. | What else were you doing?<br>Write in the most important activity you were doing at the same time →<br>e.g. Looking after children, listening to the radio or having a drink | Where were you? →<br>e.g. At home, at friends, in car, on bus, train, cycling, walking | Were you with anybody?<br>Please mark the boxes. See example on page 3. | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Alone or with people you don't know | Children up to 9 living in your household | Children aged 10 to 14 living in your household | Other household members | Other persons that you know |
| 7:00-7:10 | Sleeping | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7:10-7:20 | ↓ | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7:20-7:30 | Had a shower | | At home | ☐ | ☒ | ☐ | ☒ | ☐ |
| 7:30-7:40 | Made breakfast | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7:40-7:50 | Ate breakfast | Read newspaper | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 7:50-8:00 | Did washing up | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8:00-8:10 | Got my son dressed | Talked with my son | ↓ | ☐ | ☐ | ☐ | ☒ | ☐ |
| 8:10-8:20 | Walked to school with son | | Walking | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8:20-8:30 | Dropped son off at school | ↓ | | ☐ | ☒ | ☐ | ☐ | ☐ |
| 8:30-8:40 | Walked to bus stop | | ↓ | ☒ | ☐ | ☐ | ☐ | ☐ |
| 8:40-8:50 | Travel by bus to work | Read newspaper | On the bus | ☐ | ☐ | ☐ | ☐ | ☐ |
| 8:50-9:00 | | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9:00-9:10 | ↓ | ↓ | ↓ | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9:10-9:20 | Walked from bus stop to main job | | Walking | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9:20-9:30 | | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9:30-9:40 | ↓ | | ↓ | ☒ | ☐ | ☐ | ☐ | ☐ |
| 9:40-9:50 | Main job | | | ☐ | ☐ | ☐ | ☐ | ☐ |
| 9:50-10:00 | ↓ | | | ☐ | ☐ | ☐ | ☐ | ☐ |

as "stylized estimates" (Juster & Stafford, 1985). Respondents are asked to report their time devoted to housework in an "average" or "normal" or "typical" week.

The time diary method builds up a summary measure of respondents' activities from their entries in a diary. A respondent keeps a record of activities using their own words or preset codes throughout the sampled days. The diary is composed of 10-min or 15-min slots that are summed up to 1,440 min. A common form of time use survey records respondents' main activities, parallel or secondary activities, whom they were with when undertaking the activities, and the location.

An example of time use survey (taken from the Office for National Statistics, UK Time Use Survey 2000 User Guide) is given below (Table 1).

The experience sampling method (ESM) alerts respondents by a beeper and records their activities at randomly selected moments (Csikszentmihalyi & Larson, 1987).

## Advantages and Disadvantages: Stylized Estimates, Diary Estimates, and ESM Estimates

Stylized estimates of housework time can be conveniently collected in surveys where time use is only one of the several variables of research interest. It imposes a less burden on respondents, in terms of their time and commitment, than other methods. But stylized estimates contain certain recall biases because it is difficult for a respondent to remember and report exactly the amount of time used. They also tend to produce total time greater than 168 h for a week (Gershuny & Robinson, 1994). It can also be biased by social desirability factors because of interactions between the interviewer and the respondent in a survey interview.

The time diary method depends less on respondents' memory and calculation and on their time use than the stylized estimate approach and is therefore less prone to produce recall error. It also provides detailed information of the respondent's use of time on various activities during the sampled day, the sequence of these activities, and the contexts of performing such activities. Nevertheless, completing a diary is onerous. The response rate is often low. Since keeping a diary is already burdensome for respondents, it is usually not feasible to incorporate a wide range of questions concerning their family and demographic backgrounds that are associated with their time use patterns.

The experience sampling method (ESM) is the least demanding in terms of respondents' time among the three methods. It is used to obtain a sample of high representation of different times of the day. It causes virtually no recalling problems to respondents. It produces very accurate measures of population average of housework time. Nonetheless, it creates physical burden since respondents have to carry a beeper with them during the survey period. Owing to the relatively high cost of the electronic beepers, the samples in these studies are typically small. Another disadvantage is that it fails to provide an adequate basis to establish an individual-level time budget.

### The Gap Between Stylized Estimates and Diary-Based Estimates of Housework Time

A number of past studies found that stylized estimates are higher than diary-based estimates (Kan, 2008, using British data; Bianchi, Milkie, Sayer, & Robinson, 2000, Juster, Ono, & Stafford, 2003, Marini & Shelton, 1993, and Robinson, 1985, using US data; Baxter & Bittman, 1995, using Australian data; and Niemi, 1993, using Finnish data). However, Bonke (2005) analyzed Danish data and found that diary estimates are longer than stylized ones. Kitterød and Lyngstad (2005) analyzed Norwegian data and found insignificant differences between the two types of estimates. Lee and Waite (2005) found that ESM housework time estimates are longer than stylized estimates.

## Measurement Error

All types of housework time estimates contain certain measurement errors, including both random error and systematic error. The difference between housework time estimated by stylized, diary, and ESM data indicates that the nature and size of measurement error are different in these data.

Kan and Pudney (2008) evaluated the impacts of measurement error on common statistical models where the housework time estimate is used as a dependent variable, an independent variable, and a basis for estimating population average.

Research has found that the difference between stylized and diary housework estimates, that is, the measurement error, depends on gender (Baxter & Bittman, 1995; Niemi, 1993; Robinson, 1985; Kan, 2008; Kan & Pudney, 2008), educational qualifications (Kan & Pudney, 2008; Press & Townsley, 1998), and the total housework hours of respondents (Kan, 2008; Press & Townsley, 1998). These findings suggest the presence of systematic biases in housework time estimates.

### Possible Sources of Reporting Error

Kan (2008) compared time stylized and diary housework time use data collected from the same respondents in a British survey to test the following explanations and hypotheses. She found supportive evidence for all the following four hypotheses.

First, the gap between stylized and diary estimates is due to the unclear definition of housework. Housework is usually referred to as routine housework, such as cleaning, cooking, and doing the laundry, in social surveys. But respondents may take some of nonroutine types of household work, such as childcare, shopping, and gardening, into account when they report their housework time in survey interviews.

**H1:** The gap between the estimates is greater for women and when dependent children are present in the household. It is because the respondent might confuse childcare with housework and women usually are responsible for the major share of caring work and all types of domestic work.

A second factor is inaccuracy in the respondent's estimation and reporting in their housework time. In this regard, the gap between stylized and diary estimates will be larger when the respondent has irregular patterns of housework participation.

**H2:** When the variation in housework hours increases, the gap between the estimates will be larger.

Third, some respondents undertake housework simultaneously with other activities. Their stylized estimates of housework may include housework undertaken as a secondary activity, but diary-based estimates can differentiate between primary and secondary activities clearly (Juster & Stafford, 1991; Marini & Shelton, 1993). Hence the gap between the two estimates will be larger for women than for men because women multitask more often and are more likely to report housework as secondary activities (Lee & Waite, 2005).

**H3:** The gap between the two types of estimates of housework hours will be larger when the time spent on housework as a secondary activity increases. The effect will be greater on women than men because women are more likely to multitask and undertake housework as a secondary activity.

Finally, the report of housework time in survey interviews is likely to be biased by social desirability factors. Press and Townsley (1998) suggested that reporting housework hours in survey interviews is a gendered process and the role of social desirability plays a key role in explaining the gap between the estimates. The domestic division of labor in many countries is highly gendered, with women undertaking the major share of it regardless of their employment status (e.g., Bianchi et al., 2000; Laurie & Gershuny, 2000). Some respondents might feel the pressure to report a level of housework participation that agrees with the normative gender roles, should their actual participation depart from their gender role attitudes.

**H4:** When gendered expectations are violated, for example, when a man holding traditional gender role attitudes spends long hours on housework or a woman holding traditional attitudes spends short time on housework, the respondent will underreport or overreport his/her housework time.

### Impacts of Error on Common Statistical Models

Kan and Pudney (2008) analyzed data of a British time use survey (the Home On-line Study) and a long-running household panel survey (the British Household Panel Survey) to examine the impacts of measurement error in housework time use data on common statistical models.

They assumed that diary estimates are systematically unbiased but subject to random measurement errors, while stylized estimates are potentially prone to both systematic and random errors. Given these assumptions, they found that there is systematic error in the stylized estimates of housework time. Nonetheless, the main type of error is random error.

Random errors usually create less serious problems in statistical models than systematic errors. Systematic errors are associated with certain population characteristics and can potentially bias researchers' interpretations of their findings.

When housework stylized time use estimate is used as a dependent variable, the measurement error will bias some of the coefficients of explanatory variables such as gender and educational qualifications that are associated with systematic error. Nevertheless, the bias is not substantial because most of the measurement error is random rather than systematic.

When the stylized time use estimate is an independent variable, for example, in ordinary regression models to predict the level of satisfaction with leisure time, its coefficient is strongly biased towards zero. Thus a researcher using stylized data would greatly underestimate the impact of housework on satisfaction with leisure if he or she treats the stylized time use variable as unbiased.

When stylized housework time use data are used as a basis to estimate average time use of different particular population groups, the estimation is biased by systematic error.

The biases are strong if the population categories, including age, educational level, and gender, are associated with systematic biases.

## Discussion

Stylized data and diary data of housework time are the most common types of measures of housework participation in social surveys. Both types of data have their own advantages and disadvantages.

Stylized data are commonly available in large-scale national surveys, but they are less accurate than diary data and contain both systematic and random measurement errors.

Diary data are more accurate but they are expensive to collect and impose a stronger burden on respondents than stylized data.

Researchers should understand the nature of measurement errors in different forms of housework time data and be aware of their impacts on statistical models when interpreting findings derived from these data.

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▶ Household Work

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# Housing Access Control and Crime

▶ Impact of Housing Design on Crime

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# Housing Affordability

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## Synonyms

Affordable housing; Rent-geared-to-income

## Definition

Housing affordability broadly refers to the cost of housing services and shelter – both for renters and owner occupiers – relative to a given individual's or household's disposable income. While there is no universal definition for this term, housing affordability is an easy concept to grasp in general. At the same time, affordability can be hard to pin down in practice, especially in terms of defining the appropriate geographic scope for housing markets, suitable definitions of representative reference individuals and households, and their changing circumstances over time. In its most crude form, housing affordability simply refers to the rent-to-income ratio or house-price-to-income ratio; more sophisticated measures of housing affordability consider (1) how much nonhousing expenditures are limited by how much is left after paying for housing or (2) in addition to "income affordability," they distinguish between "purchase affordability" (the ability to borrow funds to purchase a house) and "repayment affordability" (the ability to afford housing finance repayments). Over the last three decades or so, policy makers have increasingly begun to frame discussions of the availability of adequate housing opportunities in terms of housing affordability as opposed to the more traditional notion of housing need.

## Description

### Overview

While housing is often the largest expense most families face, concerns over its affordability have traditionally not seen commensurate reflection in national public policy debates. For most of the postwar era, national welfare policies were predominantly focused on other welfare programs, such as social security or ► health care. Indeed, in most developed countries, housing affordability has joined more traditional housing issues such as fair housing access and substandard quality units as a focal point of discussions about housing policy only since the 1980s. The more widespread usage of the term housing affordability among housing policy advocates, particularly in the United States and Europe, has been widely criticized, both as a concept for analyzing housing problems and as a definition of housing need (see Hulchanski, 1995 for a detailed overview of these criticisms). The literature on housing affordability tends to focus on either low-income families or median households.

When operationalizing housing affordability, policy makers have widely relied on the standard rule of thumb that households should not spend more than 30–35 % of their income on housing expenditures (Quigley & Raphael, 2004). In the United States, for example, policy makers have relied on the 30 % threshold to identify the appropriate level of housing subsidies for programs such as the Housing Choice Voucher (HCV) program. In this program, the US Department of Housing and Urban Development (HUD) defines metropolitan level as "fair market rents" which are expressed in terms of the 40th percentile rent of standard-quality rental housing units. This includes occupied units which are on 10 acres or less, which have full plumbing and kitchen facilities and which are more than two years old. HUD then provides assistance sufficient to close the gap between this fair market rents and 30 % of a low-income household's income.

In the United States, concerns over the availability of financing of affordable housing for low- and moderate-income families led to affordable housing goals in the 1980s, requiring the government-sponsored enterprises to increase their purchases of mortgages originated by low- and moderate-income households (Ambrose & Thibodeau, 2004).

Overall, the complex nature of the term housing affordability reflects links to both housing demand and supply factors. On the housing demand side, affordability primarily depends on household income and the ► accessibility and cost of credit. On the supply side, affordability depends on factors such as the cost of construction, local land-use regulation (e.g., zoning restrictions, growth boundaries), and rent controls.

### Measuring Housing Affordability

While the affordability of rental housing is usually directly captured in rent-to-income ratios, economists argue that – in addition to real interest rate that measures the user cost of housing capital – an equivalent affordability measure of owner-occupied housing also depends on ▶ taxes, depreciation, and ▶ capital gains. Furthermore, since affordability measures are governed both by housing costs and incomes, developments in the distribution of income are likely to be of particular importance when explaining changes in affordability experienced by lower-income households. Although the housing-cost-to-income ratio approach has the longest history and widest recognition, economists have recently reemphasized an opportunity cost-based definition of affordability in terms of "residual income"; according to this definition of affordability, a household is viewed as having an affordability problem if it cannot meet its nonhousing needs at some basic level of adequacy after paying for shelter (Stone, 2008).

### Alternative Measures

In addition to the housing cost-to-income ratio, structural changes in mortgage markets have given rise to the notion of "purchase affordability" (the ability to borrow funds to purchase a house) and "repayment affordability" (the burden imposed on a household from repaying housing debt) as important metrics for policy makers (Gan & Hill, 2009). In most countries, the general increase in indebtedness, due in part to deregulation in the mortgage markets, has been mostly offset by the decline in borrowing rates. With a few exceptions, households do not seem to devote a greater share of their income to ▶ debt service than in the recent past.

In the United States, the National Association of Realtors provides a widely used Housing Affordability Index (HAI) that measures whether or not a typical family could qualify for a mortgage loan on a typical home. Alternative versions of HAI that do not incorporate the cost of housing finance simply express the average cost of a typical home as a multiple of the annual average household income.

However, important aspects of housing quality depend on local public goods and amenities that are tied to the location of housing, which in turn affects the well-being of individuals and households. Consequently, an ideal measure of affordability should also incorporate the opportunity cost facing households due to housing location, such as differences in job ▶ accessibility, school quality, ▶ environmental quality, and public safety (see the next section for more discussion of this point; Fisher, Pollakowski, and Zabel (2009) proposed such an amenity-based housing affordability index).

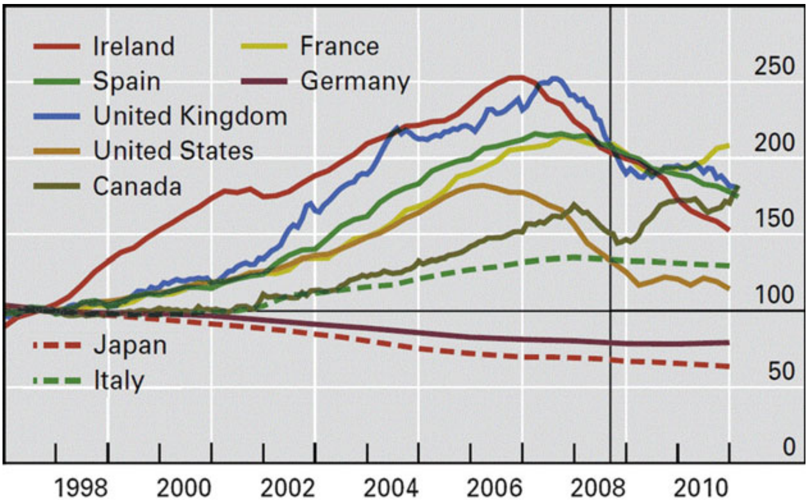
## Housing Affordability and Quality of Life

Economists have long raised concerns about an affordability metric that combines both income and housing costs, thus potentially conflating issues of income inequality with problems in the housing market and households' consumption choices of nonmarket goods, such as amenities or local public goods (see, e.g., Glaeser & Gyourko, 2008). Indeed, a national 30% affordability threshold seems particularly problematic given that significant inter-metropolitan differences in the ratio of income to housing cost are consistent with the basic notion of a locational equilibrium, because differences in nonmarket goods influence both housing prices and wages.

### Wages, Rents, and the Quality of Life

Urban economists generally think about ▶ quality of life in terms of the relative importance of different factors to household well-being, usually expressed as utility. The key insight of this literature rests on the observation that location-specific differences in wages and (land) rents should compensate for differences in nonmarket characteristics, such as natural or cultural amenities that increase the attractiveness of a given locality. In other words, local differences in the quality of life may compensate households for below-average housing affordability, as approximated by the housing cost-to-income ratio.

A growing body of literature has tried to produce theoretically consistent quality of life rankings for urban areas by deriving wage and rent differentials via hedonic methods, calculating the implicit prices of location-specific amenities which are then used as utility valuation weights. Seminal work by Rosen (1979) and Roback (1982) demonstrates that households are willing to pay more for housing and accept lower wages



**Housing Affordability, Fig. 1** Real prices of residential properties. Notes: *The vertical line* marks September 15, 2008, the date on which Lehman Brothers filed for Chapter 11 bankruptcy protection. Price indices are deflated by consumer prices Source: Bank for International Settlements (2011)

in metropolitan areas which provide a higher quality of life because of local amenity differences (see also Albouy, 2008; Blomquist, Berger & Hoehn, 1988; Gyourko & Tracy, 1991). For comprehensive surveys of the growing ▶ quality of life literature, see, for example, Gyourko, Kahn, and Tracy (1999); Blomquist (2006); or Lambiri, Biagi, and Royuela (2007).

### Housing Affordability with Local Wage and Price Variation

Locations with the highest quality of life tend to be places – ceteris paribus – with above-average housing cost and below-average wages. As a result, local housing affordability conditions and ▶ quality of life tends to be negatively related as the most desirable locations are likely to have the highest rent-to-income ratios. This has specific implications for the conduct of national housing policy. In the United States, for example, the standard subsidy is equivalent to the gap between fair market rents and 30 % of income. Such a housing affordability-related subsidy ignores differences in the typical housing bundle available within different types of metropolitan areas. For example, if the difference in fair market rents between high-amenity and low-amenity metropolitan areas is fully capitalized into housing prices, then federal housing subsidies may be merely offsetting metropolitan differences in amenity-related ▶ quality of life. As a result, households living in low-amenity metropolitan areas may be receiving lower-quality housing than households residing in high-amenity areas, given an equivalent subsidy (Bieri & Dawkins, 2012).

## Housing Affordability During the Great Housing Boom and Bust

In the vast majority of OECD economies, house prices have risen in real terms (the ratio of actual house prices to the consumer price index) since the 1970s, with a pronounced increase in growth rates since the mid-1990s that culminated in the historic highs at the peak of the great housing boom of 2006. As average incomes grew more slowly during the 15-year run-up in house prices prior to the financial crisis, overall housing affordability decreased in most of the major advanced economies. However, the steep collapse in residential property prices has released some of the pressure on housing affordability – at least at the national level – as personal incomes did not experience a comparable contraction in most countries (see Fig. 1).

In the wake of the financial crisis, there seems to be a disconnect between affordability and the anemic recovery of the housing market, particularly in the United States and the United Kingdom where affordable housing might not register as a political issue once the global economic recovery is in full swing. Unlike other major political issues and despite its role in sparking the financial crisis, housing is not seen as universally broken, and housing policy advocates are concerned how to better position affordable housing on the national agenda.

## Cross-References

- ▶ Environmental Amenities and Disamenities
- ▶ Housing and Quality of Life
- ▶ Income Distribution
- ▶ Inequality in Quality of Life
- ▶ Low Income Measures (LIMs)
- ▶ Public Good(s)

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# Housing and Aging

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## Synonyms

Accessibility to services; Ageism; Aging and institutionalization; Community attachment; Housing conditions; Housing strategies for maintaining or improving quality of later life; Neighbourhood and neighbours; Physical and social environment; Residential mobility; Residential satisfaction

## Definition

A set of decisions regarding the housing and residential environment concerning where to stay during the aging process. These decisions have to do with the residential desires to maintain or improve one's ▶ quality of life but also the level of competence in terms of health and functioning, ▶ family and ▶ support network (marital status, whether or not one has a partner and/or children), or even the personal and financial resources for confronting aging in one's place of preference, so this may affect the quality of life in old age.

## Description

### Aging in Place

The housing strategy preferred by the elderly population for living out their aging time is *aging in place*. This term, relatively recent within gerontological nomenclature (Andrews, Cutchin, McCracken, Phillips, & Wiles, 2007; Callahan, 1993; Pastalan, 1990), means not having to move from the habitual family residence, delaying having to move into an institution as much as possible (Rojo-Pérez, Fernández-Mayoralas, Pozo-Rivera, & Rojo-Abuín, 2002). In Europe, Houben (2001) analyzed the innovations carried out in the field of housing and care for the elderly, established a typology of four groups of countries in connection to the meaning of this term, and makes an international comparative study describing how EU countries deal with the coordination of housing and social policies for the elderly.

In Spain, *aging in place*, getting attention and care, would be the strategy preferred by nine out of ten older adults, if they needed help, and as a second choice, even living with a son/daughter permanently or for periods of time (Rojo-Pérez & Fernández-Mayoralas Fernández, 2007a). These preferences are explained by the fact that housing, in a limited sense, but also the residential area where it is located, in a broader sense, acts as the places to which the elderly feel most attached; they have lived there most of their working life; it is where they spend much of their time and have more binding ties and memories than young people (Fernández-Mayoralas, Rojo Pérez, & Rojo Abuín, 2004; Houben, 2001). The house is thus more than a symbol of quality of life for all ages: it is the place that covers one of our basic needs, namely, accommodation; it is the setting for intimate, family, and friendship relationships, and to some extent, leisure relationships, and it can have certain benefits for one's ▶ health and ▶ subjective well-being (Rojo-Pérez, Fernández-Mayoralas, Pozo-Rivera, & Rojo-Abuín, 2001; Rojo-Pérez, Fernández-Mayoralas, Rodríguez-Rodríguez, & Rojo-Abuín, 2007c).

Whether the housing is owned or rented, its age, size, and facilities are parameters that are interrelated in a variety of situations that make elderly people's house a more or less comfortable place to live and enjoy a better quality of life in old age. As a result of the life cycle and having lived a long time in the same place, the elderly live in older homes than other age groups, and linked with this, usually in homes that they own, because they have had enough time to have finished paying them off, and to a lesser extent, elderly people live in rented housing (Fernández-Mayoralas, Rojo Pérez, & Pozo Rivera, 2002; Rojo-Pérez et al., 2007a).

Homeownership plays an important role in the elderly's financial welfare, either as an exchange value to supplement the loss of income after retirement or as an asset that can be passed onto subsequent generations. Homeownership also gives them more freedom and control over decisions that involve housing (Rojo-Pérez, Fernández-Mayoralas, Rodríguez-Rodríguez, & Rojo-Abuín, 2007c), so that it is often and above all homeowners who carry out, to the extent of their socioeconomic capacity, the appropriate repairs, modifications, or alterations to adapt the house to age-related needs (Fernández-Mayoralas et al., 2002).

The age of the property is inversely related to its amenities, so most of the elderly live in properties that lack some of the amenities necessary to live autonomously and independently, for example, the absence of an elevator. It is worth noting that three out of ten elderly people mention facing some obstacle that limits their accessibility, either the lack of a lift to avoid having to use the stairs or the lack of ramps for wheelchairs (Rojo-Pérez et al., 2007c).

Regarding the residence function, housing is self-contained or located at a higher level (district and neighborhood), which forms an environment with certain physical and social characteristics, which no longer belongs to the exclusive domain of the person but is of general or public use, (Rojo-Pérez, Fernández-Mayoralas, Rodríguez, Prieto Flores, & Rojo Abuín, 2007b); however, this space can be as important as the private one because it contributes to maintain the resident's identity and welfare (Fernández-Mayoralas et al., 2004; Andrews & Phillips, 2005).

The interest in the place of residence must be conceptualized through ► accessibility to services, integration in the place through participation in activities, and the appreciation that there are obstacles or problems that may hinder such integration (Rojo-Pérez, 2011). These three components are to be found in the ► Community Well-Being Index, which considers three key aspects: the community services, the ► community attachment, and the physical and social environment (Forjaz, Prieto-Flores, Ayala, Rodriguez-Blazquez, Fernandez-Mayoralas, Rojo-Perez, & Martinez-Martin, 2011).

In the first case, the services that elderly people perceive as being more accessible in their residential environment are those that have to do with basic needs (food), and after these, primary health care services (high use) and parks and green areas. Indeed, it is the green areas that let them perform healthy leisure activity such as walking and exercising outdoors. In general, the pattern of leisure activities and use of the space in which to use that free time that is no longer devoted to working differs by age and gender, such that women tend to be more involved in domestic activity-related tasks pertaining to indoors, that is, the house, while socializing activities, geared towards the external environment, the neighborhood, tend to be more common among men and those who are younger (Lardiés-Bosque, 2011). Finally, physical and social obstacles that may impose barriers in community life, be it the presence of stairs, building works, traffic and environmental noise, or the deterioration of social or economic conditions in the neighborhood and its residents, are factors that can also affect integration in the area of residence (Rojo-Pérez, 2011).

An unsuitable relationship between the residential environment, on the one hand, and the elderly population's physical ability and socioeconomic status, on the other, could lead to loss of independence, the disintegration and restriction of activity in the living space and, in extreme cases, to an early process of institutionalization.

The *aging in place* housing strategy produces a high level of ► residential satisfaction in elderly people, irrespective of the environmental element in question, whether it be the ► neighborhood, the housing, or the neighbors, and the latter two parameters have, in the context of global quality of life in old age, great explanatory power, along with others such as their financial status, general health, family relationships, physical appearance, and form of cohabitation (Rojo-Pérez, 2011).

## Moving to Another Family Dwelling

There is a small but growing proportion of elderly people who, wishing to reside in their own family home, change their habitual residence for another, in what has been called "residential mobility of the elderly" as another housing strategy to maintain or improve the quality of life in old age. This phenomenon is gaining importance not only due to the volume of people involved but also to its socioeconomic and territorial consequences (Duncombe, Robbins, & Wolf, 2001).

As one ages, the probability of changing residence increases (Puga González, 2004), and retirement or the end of one's working life acts as a "trigger mechanism" of residential mobility. In this sense, in a seminal study in Spain, one in four elderly people expressed a likelihood of moving (Abellán & Rojo, 1997). The most likely are the 60–64 age groups, many of whom still engage in economic activity, and what is most notable about this likelihood is how behavior differs by gender: men express a greater desire than women.

The main reasons for the residential change are family closeness, better housing, and the quality of life; to a lesser extent, they mention loneliness, the death of the spouse or partner, retirement, and health care needs (Lardiés-Bosque, Rojo-Perez, Fernandez-Mayoralas, Forjaz, & Martínez-Martín, 2011), which are also key elements in understanding what people mean by the quality of life in old age (Fernández-Mayoralas, Rojo-Pérez, Frades-Payo, Martínez-Martín, & Forjaz, 2011).

Within this housing strategy, a number of mobility subtypes have been noted that, in general, fall under amenity, demand for support or help and return to one's own or the spouse's or partner's place of origin.

What Litwak and Longino (1987) refer to as *amenity mobility* is quantitatively the most important and occurs, generally, at the time of retirement. These are individuals who are close to the ideal image of the retired, have been able to retire (or even take early retirement) at the age of 65 (or less), live with a partner, usually enjoy good health and financial security, and have left behind their family commitments and obligations. This housing strategy can be considered a cause-effect factor in quality of life and, as some authors have described (Kahana & Kahana, 2003), is actively used by a few privileged adults to change their environment and improve the experience of aging and, consequently, their quality of life.

This subtype could also include an international housing strategy, known in scientific literature as *International Retirement Migration* (King, Warnes & Williams, 1998; Rodríguez, Casado-Díaz, & Huber, 2005; Rodríguez, Fernández-Mayoralas, & Rojo, 2004), which shares the reasons and characteristics of its actors.

The propensity to mobility is also observed among people who are financially most vulnerable and have the least financial and physical resources, who tend to move more as they age in *search of support and assistance* (Robison & Moen, 2000) when they experience moderate, though not limiting, forms of disability, thus combining the two most important dimensions of quality of life in old age, health and the family network (Fernández-Mayoralas et al., 2011). It often occurs in people who are already widowed and who usually move to the homes of children or other relatives. These dependency situations can make it hard, from the age of 75 and gradually, to maintain one's personal autonomy and residential independence, which also results in mobility strategies linked to health reasons (Puga González, 2004).

The search for peace and dissatisfaction with the city encourage a residential mobility characterized by the *return to one's own or the spouse's or partner's place of origin*. In this housing strategy, there are two decisive aspects: the important economic and labor migration from the countryside to cities, which occurred in Spain from the 1950s of the last century, and ownership of a dwelling in the place of origin, which is often used first, temporarily (weekends or holidays) and then as a destination in old age, sometimes without being registered as a return movement from city to countryside (Rodríguez, Egea, & Nieto, 2002; Egea, Rodríguez, Nieto, & Jiménez, 2005).

## Aging in Residential Care Settings

The usual form of accommodation of the elderly population is living at home or in the habitual family home. That is how 97.7 % of the population aged 65 and older live, according to data from the latest Population and Housing 2001 census (Rojo-Pérez, 2011). Another spatial context of aging, different from aging at home or *aging in place*, is living in a residential care settings or nursing homes, which is generally called the institutionalization of the aged. The reason for the low proportion of elderly in nursing homes in Spain is that this is the residential option chosen last of all, provided that certain personal circumstances, or also an inadequate residential environment (Oswald & Wahl, 2005), force this population to change their residence. So when the elderly are asked which residential resources (multiple response) they prefer when they need help, 90 % of respondents insist on residing in their own home with care and attention, living in their children's home (45 %) or using day care centers and sleeping in their own homes (15 %); only 15 % and 12 % of respondents mentioned the strategy of living permanently or temporarily in a nursing home, respectively (Rojo-Pérez et al., 2007a).

There are more women than men living in nursing homes, where the average age of residents is relatively high (over 80 years), and most of them do not have a partner (they are single, widowed, separated, or divorced), and a smaller proportion are married, although their partner does not always live in the same nursing home. They have a relatively low level of education, comorbidity, or suffer adverse health conditions and moderate or severe disability (Prieto-Flores, Forjaz, Fernandez-Mayoralas, Rojo-Perez, & Martinez-Martin, 2011).

The main reasons stated for living in a residential care setting are associated with adverse health or functional conditions, the lack of a spouse/partner or other family members, the family burden, being too old to live alone, as well as certain inappropriate conditions of the housing and habitual residential environment.

In this residential context, the elderly report a high level of satisfaction with the residential environment of the nursing home and with other residents (7.8 and 7.1, respectively) (Prieto-Flores, Fernández-Mayoralas, Forjaz, Rojo-Pérez, & Martínez-Martín, 2011), measured on a bipolar scale ranging from 0 (completely dissatisfied) to 10 (completely satisfied). ▶ Satisfaction with life as a whole, as an indicator of overall quality of life, also scores highly (7.6 out of 10). In this sense, the elderly living in community score their quality of life lower than those living in nursing homes (6.4 vs 7.2, respectively) and could be explained not only by the subjective well-being homeostatic system, which helps to maintain a positive view of life (Cummins, 2003), but also because there is still a relative proportion of elderly living in their normal housing who say they need help with their ▶ activities of daily living but do not have this need satisfied, which leads to their poorer perception of their quality of life.

## Discussion

The aging process affects many spheres of life, one of the most important having to do with the physical environment of residence and the limitations it can impose on people who see a deterioration in functioning and health conditions and a weakening of their family and social ties, their social participation, their financial resources, and other elements of community life. Being able to enjoy the ideal situation of aging at home would entail the housing and physical environment being adapted to the conditions of their occupants, allowing individual to maintain their autonomy and independence and, consequently, their quality of life.

Of the different housing strategies, nonmobility, that is, *aging in place*, is the most widespread due to the number of people who, after retiring or passing the 60-year threshold (them or their spouses), decide to stay in their place of habitual residence. Failure to make a move or change home does not mean, however, residential inactivity. The subject's behavior is always active, and they are a potential migrant, because they continually reassess residential satisfaction (Abellán & Rojo, 1997).

Also within this context of *aging in place*, at other times subjects change their residential housing and move to another relative's home, for several reasons, either seeking a healthier place, proximity and family support, return to place of origin, etc., but always improving their quality of life. In this scenario, Warnes, Friedrick, Kellaher, and Torres (2004) consider that the housing strategy based on amenity mobility is notable for its rapid growth in Europe, at an estimated rate of 7 % since the 1960s.

If most people want to live their aging stage in their usual residential environment with autonomy and independence, a good line of defense against institutionalization in the event of fragility or dependency is to provide schemes with health services for adults and, in particular, with home care or day care centers that promote this housing strategy as a process of integration in place (Cutchin, 2003), as well as the existence of a hospital discharge management system that avoids premature institutionalization (Steeman, Moons, Milisen, De Bal, De Geest, De Froidmont, Tellier, Gosset, & Abraham, 2006) in the event of adverse health and social support conditions.

## Cross-References

- ▶ Aging Population
- ▶ Community Well-being
- ▶ Housing Conditions
- ▶ Neighborhood
- ▶ Residential Mobility
- ▶ Sense of Place
- ▶ Social Integration
- ▶ Social Participation

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# Housing and Quality of Life

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## Synonyms

Built environment; Good life; Home quality of life; Housing comfort; Life satisfaction and housing; Sheltered housing; Well-being and housing

## Definition

Housing is defined and delimited to the home and its very close surroundings, including sheltered housing. Housing mostly denotes the physical dimension of the home, while home often adds a social and spiritual dimension.

## Description

Housing can be considered as a fundamental human right and a prerequisite for autonomy, independence, and health (United Nations, 1948). The home environment is one of many facets of quality of life outcomes included in the World Health Organizations quality of life assessment instrument, WHOQOL (Group, 1994), others being, e.g., health, relationships, safety, independence, and participation. Housing is important in all ages, but particularly among those spending the majority of their time within the home it becomes a central arena in everyday life. This is seen in old age (Baltes & Baltes, 1993) and among persons with severe physical and mental illness and disability. Although housing and quality of life for long separately have been in focus for research within a number of disciplines, e.g., gerontology, rehabilitation medicine, occupational therapy, sociology, and psychology, a more comprehensive understanding of their relationships is still sought for.

Housing embraces objective as well as perceived aspects, and it has a deeper meaning to many people since it is holding memories from past life. Routines and habits developed over the years living in the housing have an important supportive role as they preserve energy and allow people to focus on more complex activities. This is particularly important when the person's capacity declines. In this respect, housing has the possibility to support activity and independence.

One aspect of quality of life is participation. According to research by Haak, Dahlin Ivanoff, Fänge, Sixsmith and Iwarsson (2007) on relationships between housing and health, participation is described as being a part of a larger context. Two dimensions of participation have emerged: performance-oriented participation and togetherness-oriented participation. Performance-oriented participation is more likely among those living close to family and friends and is experienced when being able to perform activities for other people. To perceive the home as useful is another aspect of quality of life. Thus, those who live close to family and friends in an environment they perceive useful are more prone to report that it is easy to help out with things and they more often perceive they perform activities with satisfactory quality. The second dimension, togetherness-oriented participation, is perceived through a sense of belonging and community and is about sharing experiences with others. For both dimensions, housing plays a crucial supportive or constraining role.

Housing is also strongly linked to the experience of independence (Haak, Fänge, Iwarsson, & Ivanoff 2007). Independence is described both as a constant striving to cope with daily life chores and as having the opportunity to manage and control one's life situation. The perception of independence changes with increasing disability from being able to manage for oneself without help from others to the ability to take decisions and have influence over daily life, i.e., to be autonomous even if it means you are dependent on others. As long as there is a possibility to be involved in making decisions, perceived independence is still possible. Here, the housing can significantly support or constrain the person's ability to be autonomous and independent.

Research has also demonstrated close relationships between different aspects of housing and health (Oswald et al., 2007), e.g., in relation to falls and falls incidents (Chang et al., 2004) and modifications of the physical housing environment (see, e.g., Wahl, Fänge, Oswald, Gitlin & Iwarsson, 2009). Given the fact that health is an important dimension of quality of life, these findings support the notion of housing as an important aspect of quality of life. Moreover, research within occupational therapy indicates that activity and participation or, in other words, occupation is important to health and quality of life (Wilcock, 1998). Within the WHO framework International Classification on Functioning, Disability and Health (WHO, 2001), the housing is part of the context that has implications at all levels of the framework. More specifically, housing impacts in particular on activity and participation.

Turning to another domain of research, the impact of housing on quality of life among persons with severe and persistent mental illness, SPMI, has gained scarce attention and much remains to be investigated. Within this group, the majority of the evidence comes from studies among people having a history of homelessness. Among them, it has been demonstrated that moving from a housing that is appropriate to one's needs and capacities to that which is inappropriate results in a quality of life decline. The widely used institution-community interface model, "Continuum of Care," assumes that people with SPMI pass through successive stages and types of accommodation, at each stage demonstrating a readiness for housing, mostly by adhering to the treatment offered. However, taking a different standpoint, the "Housing First" model acknowledges the fact that appropriate housing is a prerequisite for social participation and quality of life (Kyle & Dunn, 2008).

## Cross-References

- ▶ Disability
- ▶ Housing and Aging
- ▶ Mental Illness
- ▶ Nursing Home Residents
- ▶ Residential Satisfaction

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## Housing Characteristics

▶ Housing Quality and Maternal Mental Health

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## Housing Comfort

▶ Housing and Quality of Life

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## Housing Conditions

▶ Housing and Aging

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## Housing Conditions and Quality of Life in Germany

▶ Living Conditions and Well-Being Using German Socio-Economic Panel

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## Housing Costs Theory

▶ Living Conditions and Well-Being Using German Socio-Economic Panel

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## Housing Environment and Quality of Life in Germany

▶ Living Conditions and Well-Being Using German Socio-Economic Panel

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## Housing Instability and Mental Health

▶ Housing Quality and Maternal Mental Health

# Housing Quality and Maternal Mental Health

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## Synonyms

Home environment; Housing characteristics; Housing instability and mental health

## Description

Housing can impact health through structural, psychological, and social levels (Dunn, 2002; Shaw, 2004). Inadequate housing conditions are associated with both physical as well as mental illness through direct and indirect pathways. Structural features of the home (i.e., mold, pest infestation, peeling paint) directly impact health, while location (accessibility to services and facilities), ▶ neighborhood built environment (▶ recreation, parks, walkability) as well as social connectedness to a community can indirectly impact health (Shaw, 2004).

Specific structural features of the home have been associated with psychological health (Weich et al., 2002). For example, living in multiunit dwelling, higher floor level, and housing type (high rise vs. low rise) has been associated with ▶ distress symptoms and depression among women (Evans et al., 2003). Other features of housing quality, such as structural deterioration of the home, presence of mold, and pest infestation, have also been associated with distress (Sandel & Wright, 2006; Shenassa et al., 2007). In a study conducted in London, Weich et al. reported that a higher prevalence of depression was associated with independently rated structural features of the ▶ built environment (Weich et al., 2002). Among New York City residents, Galea et al. (2005) reported that living in a neighborhood characterized by poor quality built environment is associated with greater likelihood of depression even after accounting for individual level sociodemographic factors and neighborhood level income. Furthermore, improvement of housing conditions or moving to better quality housing has been demonstrated to improve mental health outcomes (Elton & Packer, 1986; Halpern, 1995). The link between structural features of the home and mental well-being could be due to various factors such as difficulties in dealings with repairs and landlords, stigma of living in a deteriorated home, insecurity, and concerns about tenure (Evans, 2003; Evans et al., 2003).

Other housing features not related to the structure of the home have also been associated with distress symptoms. For example, overcrowding, housing costs, and lack of control over housing (i.e., landlord unavailable to fix things) have also been associated with distress symptoms and poor mental health (Dunn & Hayes, 1999; Evans et al., 2000; Dunn, 2002). These associations can be potentially explained by lack of control over one's living environment. When one loses the ability to cope or to take control over one's life or environment, we perceive stress. Thus, the home environment may be a direct stressor which can affect individual health (Elliott, 2000).

Episodes of homelessness have also been associated with poor mental and physical health (Munoz et al., 2005). Physical and mental health problems can be an antecedent to homelessness as they can interfere with one's ability to work, as well as deplete economic resources (Wells et al., 2010). In addition, mental health problems can isolate individuals leaving them with less ▶ social support, putting them at greater risk for ▶ homelessness. Frequent moves, a lower intensity stressor, may also generate psychological distress. In longitudinal studies, residential instability, defined as frequently moving or not having enough money to pay rent, has been associated with depression among women (Magdol, 2002; Davey-Rothwell et al., 2008). In a study of drug users and their ▶ social network members, Davey-Rothwell et al. noted that frequent moves in a 6-month period were associated with higher levels of depressive symptoms independent of homelessness in the past 6 months

(Davey-Rothwell et al., 2008). Thus, while mental health problems can be a precursor for housing instability, instability can also be a precursor for mental health problems.

While there is evidence of an association between housing and mental health, most studies have not accounted for other social stressors that are likely to co-occur in the lives of those experiencing poor housing conditions. Women of low socioeconomic status are more likely to live in poor housing conditions in addition to experiencing a number of other social stressors. Housing quality is tightly associated with socioeconomic status. Lack of financial resources results in fewer housing options that are often of poorer quality, as well as resulting in frequent moves. Financial hardship, not having enough money to pay for utilities, doctor visits, or groceries, is in itself a source of stress known to be correlated with mental health (Reading & Reynolds, 2001; Lahelma et al., 2006). ► Intimate partner violence (IPV) is also more prevalent in low-income urban environments and more likely to occur when couples are under financial strain (Benson & Fox, 2001; Benson & Fox, 2004). Women who are victims of IPV are more likely to suffer financial hardship thus hampering their ability to obtain and maintain housing. Pavao and colleagues reported that among women participating in a California population-based cohort study, those who reported being victims of IPV had approximately four times the odds of reporting housing instability compared to women who did not experience IPV (Pavao et al., 2007).

In a recent study, the influence of housing quality and instability on mental health (depression and generalized anxiety disorder [GAD]) was examined among women participating in the Fragile Families and Child Well-being study, a population-based study of a disadvantaged urban sample of women (Suglia et al., 2011). Analyses accounted for two social factors, IPV and financial hardship. In the sample of approximately 2,000 women, 16 % were classified as having probable depression and 5 % as having probable GAD. In adjusted analyses, mothers experiencing housing disarray (e.g., dark, crowded, noisy) (OR, 1.3, 95 %; CI, 1.0, 1.7) and instability (i.e., moving more than twice in the past year) (OR, 1.4, 95 %; CI, 1.2, 2.3) were more likely to screen positive for depression. In addition, those experiencing housing instability were more likely to screen positive for GAD (OR, 1.9, 95 %; CI, 1.2, 3.0) even after adjusting for other social factors. No associations were noted between housing deterioration and maternal mental health.

Similar to other studies, housing instability was found to be associated with mental health (Magdol, 2002; Matheson et al., 2006; Davey-Rothwell et al., 2008). There are several pathways through which housing instability could affect mental health. Constant moves disturb social networks and can result in more isolation, lack of access to support and family, and less access to healthcare. Instability can also lead to disruption in children's routines, day care, and school arrangements which could lead to more distress among mothers. Low-intensity chronic stressors have been associated with distress, even after accounting for major traumatic events. The impact of low-intensity stressors, such as overcrowding, on mental health is thought to be partly attributable to the fact that these stressors are proximal or immediate, and largely out of one's control (Miller & Rasmussen, 2010). Future assessments of housing conditions should include questions regarding pest infestation, water leaks, and mold. In addition to independently rated measures of housing quality, perception of housing quality should also be assessed to provide a more comprehensive picture of housing quality as it relates to mental health.

In summary, studies have shown that specific features of one's housing are related to mental health even after adjusting for social stressors. Particularly for young mothers and their children, providing resources to obtain and maintain adequate housing would be beneficial to both mother and child as housing conditions have also been shown to affect child physical and mental health (Evans, 2006). In addition to being directly affected by housing conditions, children could be indirectly affected by their mother's mental health status. Thus, addressing and eliminating stressors experienced by young mothers, such as housing quality, can potentially benefit mothers as well as the child's health and well-being.

## Cross-References

- ▶ Households in Substandard Living Accommodations
- ▶ Housing and Quality of Life
- ▶ Housing Tenure

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## Housing Satisfaction in Germany

▶ Living Conditions and Well-Being Using German Socio-Economic Panel

## Housing Strategies for Maintaining or Improving Quality of Later Life

▶ Housing and Aging

## Housing Tenure

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### Synonyms

Home ownership or renting; Legal entitlement to housing

### Definition

The phrase "housing tenure" has different connotations in the West than in developing countries. In the West, this phrase refers to whether households own the housing unit that they live in or whether they rent. In the rest of the world, this phrase is more commonly a reference to whether a resident has legal title to a housing unit and land.

### Description

In the West, the common mode of housing tenure is ownership. In Anglophone Western countries, almost two-thirds of the households own their homes, while in some other Western countries, the rate of homeownership is just over 50 %. Germany is one of the very few countries in the West with a homeownership rate that is under 50 % (it was 41 % in 2001). In the US, homeownership has been the stated or assumed goal of federal, state, and local housing policies for over 50 years (Schwartz, 2010). In 2007, just before the collapse of the housing market in the US, about 69 % of households owned the homes that they lived in (Schwartz, 2010). Ownership has historically been viewed as the preferred mode of housing tenure in the US for several reasons. In the long run, ownership reduces the amount of money (as a percentage of income) that households spend on housing costs, since these costs can be fixed with long-term fixed-rate self-amortizing loans, while incomes usually increase over time (Green & Malpezzi, 2003). Rents often keep pace with inflation (and hence with incomes), thereby keeping housing costs of renters at a constant (often high) level. Also in the long run, as mortgage loans are paid off and housing values increase, homeowners build equity in their homes – and for most Americans, home equity is the largest, and often the only, source of wealth building (Rohe, McCarthy, & van Zandt, 2000). Homeowners are also more likely to stay in communities where their houses are located for longer periods of time because of the higher transactions costs of moving when owning. They are also more likely to participate in civic engagements in those communities and contribute and benefit from the social capital of those communities (Rohe et al., 2000). Ownership also comes with tax advantages for individuals. Homeowners are also believed to be generally healthier and happier than renters.

In the early 2000s, in the US, much was made of the high mobility rates of children in renter households. Since high mobility is correlated with lower school performance, a push for homeownership also came from those concerned about the quality of K-12 education in US localities. The collapse of the US housing market has revealed the extent to which the much-publicized advantages of ownership over renting had skewed policies and programs in the private and public sectors as well as people's decision-making processes in choosing housing tenure. Many households made irrational choices when choosing to become homeowners in the 2000s and then lost their homes – losing capital, savings, and self-respect along with their homes (Anthony, 2012). In the wake of the crisis, many researchers and policymakers now question whether homeownership should be as aggressively pushed over renting in the years ahead.

In developing countries, the rapid pace of ▶ urbanization in the last four to five decades has outpaced the rate at which land and housing are developed by public and private entities through formal mechanisms. This shortfall between demand for developed land and housing and its supply has given rise to a large informal land and housing development sector (Lim, 1987). In urban areas of developing countries, these informal housing markets account for as much as 50 % of the new housing stock built each year (Chougill, 1994). Policies in developing countries refer to such housing as housing without tenure. Much politicking and programming attention is focused on whether specific informal settlements should be granted housing tenure or not, and if yes, then under what conditions (Pugh, 2001). Granting of tenure to such housing stock legalizes them – thus providing protection from demolition by the government and paving the way for public investment for improvement of these settlements. Houses granted tenure can be used as collateral for bank loans and thus become a way out of ▶ poverty for households living in these neighborhoods. Once granted tenure, households in these neighborhoods have similar advantages that homeowners have over renters in the US housing market.

## Cross-References

▶ Housing Affordability

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# Housing Unit Size

▶ Dwelling Size

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# Housing, Supportive

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## Synonyms

Assisted housing

## Definition

Supportive housing (in North America) means affordable housing linked directly to support services offered by nonprofit agencies to physically or developmentally disabled persons, psychiatric consumer/survivors, youth in care, ex-offenders, and/or senior citizens. Group homes, half-way houses, and supported independent living apartments are examples of supportive housing.

There can be some confusion regarding terminology in the housing sector due to language usage in different countries. In the UK, supportive housing is referred to as "supported accommodation" or "supported housing."

## Description

Supportive housing typically consists of congregate housing in which inhabitants receive both accommodation and emotional/practical supports from the same housing provider. Group homes, half-way houses, and (occasionally) supported independent living apartments are all forms of supportive housing, provided in the context of a "continuum of care." Housing administrators hope that inhabitants will progress, require less intensive forms of supervision, and then move to "second or third stage" housing. Supportive housing is available to youth in care, ex-offenders, developmentally disabled persons, senior citizens, and psychiatric consumer/survivors (i.e., persons with a psychiatric disability). This short entry focuses on housing for the latter group.

Research in supportive housing for psychiatric consumer/survivors constitutes a well-developed and critically informed body of literature. Studies suggest that supportive housing contributes to quality of life by decreasing ▶ homelessness, improving psychological functioning, decreasing government mental-health-related costs, and enhancing physical (if not social) integration of consumer/survivors. Supportive housing has helped reduce homelessness and hospitalization rates (Culhane, Metraux, & Hadley, 2002; Kyle & Dunn, 2008; Nelson & Saegert, 2009) and increase positive functioning (Kyle & Dunn, 2008; Nelson & Saegert, 2009). Supportive housing proves less costly for governments as compared to shelters, prisons or hospitals previously used by supportive housing tenants (Culhane et al., 2002).

Some specific ▶ neighborhood elements, such as the presence of green space (Clark, Myron, Stansfield, & Candy, 2007) and middle-class milieu (Evans, Wells, & Moch, 2003), are associated with improved mental health. Despite the positive associations between middle class neighborhoods and improved psychological states, most supportive housing for consumer/survivors is located in low-income areas (Wong & Stanhope, 2009; Zippay & Thompson, 2007): land affordability is a key factor for housing providers.

Supportive housing tenants have indicated a strong preference for increased privacy (Fakhoury, Murray, Shepherd, & Priebe, 2002), the ability to control their own space (Dorvil, Morin, Beaulieu, & Dominique, 2005; Nelson, Sylvestre, Aubry, George, & Trainor, 2007), and more influence over when and from whom they receive support services (Depla, De Graaf, & Heeren, 2006; Nelson et al., 2007; Stanhope, Marcus, & Solomon, 2009). Scholars whose research investigated psychiatric consumer/survivor housing preferences indicated that the majority of consumer/survivors wish to reside in their own apartments (Fakhoury et al., 2002; Forchuk, Nelson, & Hall, 2006; Kyle & Dunn, 2008; Sylvestre, George, Aubry, Durbin Nelson et al., 2007) rather than in congregate settings. Fakhoury et al. (2002) observed that "Privacy, independence, personal choice, convenient location and proximity to mental health services have all been reported to be significantly *more* important to residents in community housing than to their case managers." This difference between the priorities of tenants and those of their caregivers reflects tensions inherent between those imbued with institutional power and those without.

At least three studies noted that while there was a preponderance of congregate settings available, these forms of housing sometimes provided inappropriately high levels of support. Authors argued that tenants ought not to be moved involuntarily or be subject to the vagaries of funding. Rather, consumer/survivors required permanent, independent housing in which they could feel secure (Fakhoury et al., 2002; Kyle & Dunn, 2008; Sylvestre et al., 2007). Some studies found that access to public transportation positively influenced community integration and enhanced ▶ emotional well-being (Forchuk et al., 2006; Wright & Kloos, 2007; Zippay & Thompson, 2007).

Methodological aspects of some studies of supportive housing for psychiatric survivors can be criticized for weak design (e.g., absence of a control group, need for comprehensive longitudinal analysis, or the lack of a rigorous theoretical framework within which results were analyzed). There may also be questions regarding the representativeness of samples of psychiatric survivors, since only those receiving support are easily accessed as research participants; control groups of psychiatric consumer/survivors living happily and independently are difficult to assemble. Despite the contributions evident in examinations of consumer/survivor perspectives (Corring & Cook, 2007; Forchuk et al., 2006), some of the supportive housing literature still employs discriminatory and medicalized language to describe the supportive housing tenants. (Dorvil et al., 2005; Yanos, Felton, Tsemberis, & Frye, 2007).

There is a significant gap between the congregate housing available to psychiatric consumer/survivors and the independent, affordable housing they desire. Some scholars suggest that instead of investing in building specific structures to house indigent populations, a portable voucher system such as the American "Section 8" system (Sylvestre et al., 2007) or the Moving to Opportunity Program (Galster, Tatian, Santiago, Pettit, & Smith, 2003) might more effectively decrease ▶ poverty and integrate affordable housing within a broader mix of housing tenures. A voucher system could circumvent Not in My Back Yard (NIMBY) opposition which dramatically increases legal costs for supportive housing providers (Finkler, 2006).

Although government proponents of deinstitutionalization spoke in favor of community integration in the 1970s and 1980s, there is limited evidence that supportive housing facilitates social integration (Aubry & Myner, 1996; Wong & Solomon, 2002; Wong & Stanhope, 2009). Supportive housing – especially group homes – may be more likely to facilitate peer support, such as tenants offering support to one another (Corring & Cook, 2007; Wong & Stanhope, 2009). Communal life offers an alternative to social and emotional isolation, creates opportunity for subculture identification, and supports the establishment and maintenance of a consumer/survivor community.

In response to findings regarding community integration and consumer/survivor housing preferences, nonprofit housing providers have moved away from supportive housing to what is now known in North America as "supported housing": affordable housing in which housing and support are delinked. Consumer/survivors reside in permanent housing and access supports from a third-party agency if they choose to. This transition from supportive to supported housing in the nonprofit sector occurred in response to changes in philosophy and articulated tenant preferences (Parkinson, Nelson, & Horgan, 1999). Extended longitudinal studies would be useful in determining if this new form of housing will further enhance quality of life for inhabitants.

## Cross-References

- ▶ Housing Affordability
- ▶ Housing and Quality of Life

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## HPI

▶ Happy Planet Index

## HPLP II

▶ Chinese Health-Promoting Lifestyle Profile

## HQLQ

▶ Hepatitis Quality of Life Questionnaire, Bengali Version

## HRQoL

▶ Health-Related Quality of Life Measures

## HSQ

▶ Hotel Service Quality

## HSQ – Health Status Questionnaire

▶ Translating Health Status Questionnaires/ Outcome Measures

## HTML

▶ Metadata in the Social Sciences

## Hubley Depression Scale

▶ Hubley Depression Scale for Older Adults (HDS-OA)

# Hubley Depression Scale for Older Adults (HDS-OA)

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## Synonyms

HDS-OA; Hubley depression scale

## Definition

The *Hubley Depression Scale for Older Adults* (*HDS-OA*; Hubley, 1998) is a 16-item self-report depression measure that screens for symptoms of depression included in the *Diagnostic and Statistical Manual for Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR;* American Psychiatric Association, 2000).

## Description

### Overview and Administration

The *Hubley Depression Scale for Older Adults* (*HDS-OA*; Hubley, 1998) is a brief and cost-effective self-report screen for depression (see Table 1). This 16-item measure addresses symptoms of depression as described in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (*DSM-IV-TR*; American Psychiatric Association, 2000). Although the *HDS-OA* has the potential to be used with adults of any age, the measure was designed with older adults in mind and uses a dichotomous yes/no ▶ response format, large font size, and reminders of the two-week reference period with every item. The *HDS-OA* is freely available for clinical and research purposes.

There are two additional questions in the *HDS-OA* that are not included in the scoring. Answering "yes" to Question A raises the possibility that any endorsed depressive symptoms may be due to contraindications of medication. Answering "yes" to Question B raises the possibility that any endorsed depressive symptoms may be due to ▶ bereavement rather than major depression.

Although the *HDS-OA* is designed to be self-administered, the *HDS-OA* items can also be read aloud to a respondent if this is preferred (e.g., due to literacy difficulties, visual problems). Respondents should be encouraged to ask questions if they do not understand what is being asked in an item.

### Development

Items for the *HDS-OA* were selected to reflect the symptoms for major depressive disorder and dysthymia presented in the *DSM-IV* (American Psychiatric Association, 1994) (and subsequently reflect those in the *DSM-IV-TR*). In the author's experience with other depression screens, the time period used is often forgotten by respondents within the first 5–10 items and can cause variation in how depression items are interpreted and answered. Thus, the 2-week reference period was included with each item. A dichotomous response format was selected to make the measure easier to use with (a) older adults who may be experiencing cognitive difficulties and (b) depressed individuals who may find the cognitive load associated with more complex response formats to be too difficult.

### Scoring

For items 2, 4, 5, 6, 8, 9, 10, 11, 13, 14, 15, and 16, "yes" reflects a depressive response, whereas for items 1, 3, 7, and 12, "no" reflects a depressive response. Depressive responses are scored "1," and non-depressive responses are scored "0." Missing responses to items are scored in the depressed direction provided responses to no more than two items are missing. Item scores are summed, with total scores ranging from 0 to 16. If responses to three or more items are missing, a total score should not be computed.

**Hubley Depression Scale for Older Adults (HDS-OA), Table 1** Hubley Depression Scale for Older Adults (HDS-OA)

| | |
|---|---|
| *Instructions*: *The following questions have to do with changes that might have taken place in your life recently. For each question, please circle the answer (yes or no) that best applies to you.* | |
| 1. Over the past two weeks, have you felt useful and needed? | yes/no |
| 2. Over the past two weeks, have you noticed any changes in your appetite? (examples: you didn't feel like eating or you felt hungrier than usual) | yes/no |
| 3. Over the past two weeks, have you felt full of energy? | yes/no |
| 4. Over the past two weeks, have you often felt sad and downhearted? | yes/no |
| 5. Over the past two weeks, have your sleeping patterns changed? (examples: you have been waking up in the middle of the night or unusually early) | yes/no |
| 6. Over the past two weeks, have you had difficulty concentrating? | yes/no |
| 7. Over the past two weeks, have you been interested in your usual activities? | yes/no |
| 8. Over the past two weeks, have you felt that you (or others) would be better off if you were dead? | yes/no |
| 9. Over the past two weeks, have you become irritated more easily than usual? | yes/no |
| 10. Over the past two weeks, have you felt different than you usually do? (examples: you felt unusually restless or you felt like you were moving in slow motion) | yes/no |
| 11. Over the past two weeks, has anyone mentioned to you that you don't look or seem your usual self? | yes/no |
| 12. Over the past two weeks, have you enjoyed doing things as much as ever? | yes/no |
| 13. Over the past two weeks, have you felt like everything was your fault? | yes/no |
| 14. Over the past two weeks, have you frequently felt like crying? | yes/no |
| 15. Over the past two weeks, have you found it harder than usual to make decisions? | yes/no |
| 16. Over the past two weeks, have you thought that the future looks hopeless? | yes/no |
| *Additional questions*: | |
| (A) Have you started taking a new medication in the past month? | yes/no |
| (B) Are you grieving for someone who has died in the past two months? | yes/no |

## Reliability

Two studies have examined the ► internal consistency reliability of scores obtained on the *HDS-OA*. Hubley et al. (2009) examined the psychometric properties of the *HDS-OA* in 41 depressed inpatients and outpatients (14 men, 27 women; mean age = 60.9 years) from two hospitals and 41 age- and gender-matched nondepressed community-based participants (14 men, 27 women; mean age = 60.8 years). They reported a ► Cronbach's alpha ► reliability estimate of 0.94 for the sample. Myers and Hubley (2012) used the *HDS-OA* with 25 individuals (7 men, 18 women; mean age = 79.2 years) diagnosed with a major depressive episode (MDE), dysthymia, or depressive disorder not otherwise specified (NOS) and 25 individuals of similar ages (mean age = 79.4 years) and exact genders as the depressed group. They reported a Cronbach's alpha reliability estimate of 0.88 with this sample.

## Validity

Hubley et al. (2009) reported a ► convergent validity coefficient of 0.92 with the ► Beck Depression Inventory – Second Edition (*BDI-II*; Beck, Steer, & Brown, 1996), nonsignificant gender differences on the *HDS-OA*, and a significant *HDS-OA* score difference between individuals with and without depression. Criterion-related validity was examined by evaluating sensitivity and specificity of the *HDS-OA* scores in differentiating depressed and nondepressed individuals using receiver operating characteristic (ROC) curve analyses. The area under the curve (AUC) is a measure of the accuracy of a diagnostic test; an AUC of 0.80 or more indicates that a diagnostic test is useful as a case-finding screen (Holmes, 1998). The AUC for the *HDS-OA* was 0.98. A cutoff score of 3 yielded an optimal balance between sensitivity (93 %) and specificity (88 %).

Myers and Hubley (2012) reported convergent validity coefficients of 0.89 and 0.86 with the

30-item ▶ Geriatric Depression Scale (*GDS*; Yesavage et al., 1983) and 15-item GDS short form (*GDS-15*; Sheikh & Yesavage, 1986), respectively. ▶ Discriminant validity coefficients were provided by examining the relationship between scores on the *HDS-OA* and scores on measures of mental status (*Mini-Mental State Examination*, Folstein, Folstein, & McHugh, 1975; $r = -0.39$), ▶ anxiety (*Beck Anxiety Inventory*, Beck & Steer, 1993; $r = 0.67$), and a self-rating of physical health ($r = -0.43$). A significant difference between group scores indicated the ability of the *HDS-OA* to differentiate between individuals with and without depression. Criterion-related validity was examined by evaluating sensitivity and specificity of the *HDS-OA* scores in differentiating depressed and nondepressed individuals using ROC curve analyses. The AUC for the *HDS-OA* was 0.99. A cutoff score of 5 yielded an optimal balance between sensitivity (92 %) and specificity (100 %).

### Discussion

The *HDS-OA* is a 16-item depression screen designed for use with older adults that focuses on symptoms of depression included in the *DSM-IV-TR* (American Psychiatric Association, 2000). Preliminary reliability and validation evidence provide good support for interpreting scores from the *HDS-OA* as intended. Research has provided (a) strong internal consistency reliability estimates; (b) evidence of convergent validity with the *BDI-II*, *GDS*, and *GDS-15*; (c) evidence of discriminant validity with measures of cognitive status, anxiety, and self-rated health scores; (d) nonsignificant gender differences; (e) a significant difference between group scores (i.e., known-groups validity); and (f) good sensitivity and specificity (Hubley et al., 2009; Myers & Hubley, 2012). The *HDS-OA* is a strong competitor to (a) the 30-item *GDS*, which is a much longer and older measure that is not aligned with the symptoms of depression included in the *DSM-IV-TR* and (b) the 21-item *BDI-II* which follows the *DSM-IV-TR* but uses a more complex response format (i.e., consists of 84 statements) and must be purchased.

## Cross-References

- ▶ Anxiety
- ▶ Area Under the Curve (AUC)
- ▶ Beck Depression Inventory
- ▶ Bereavement
- ▶ Convergent Validity
- ▶ Criterion Validity
- ▶ Cronbach's Alpha
- ▶ Discriminant Validity
- ▶ Geriatric Depression Scale
- ▶ Internal Consistency Reliability
- ▶ Reliability
- ▶ Response Format

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## Human Action and Tipping Points

► Fostering Pro-environmental Behavior

## Human Adaptation

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### Synonyms

Desensitization; Habituation

### Definition

Adaptation is referred to either as a *process* of change whereby an organism increases its chances for survival and thriving in a given habitat or as a *state* of being adapted (i.e., having a capacity to function effectively toward survival and thriving).

### Description

In evolution theory, adaptation processes are defined as the processes of change whereby an organism increases its chances for survival and thriving in a given habitat. Adaptation as an evolutionary process may comprise behavioral and morphological components and take place on the levels of (a) a cell, (b) an organ (or a group of similar cells), (c) a whole organism, and (d) a population. In the evolution theory, adaptation process is closely linked to the concept of *natural selection*, with natural selection being the basis of adaptation process.

In social sciences, adaptation refers to the capacity to act according to the norms, demands, and constraints of a given community. Physiology and psychology distinguish between *sensory* and *hedonic* adaptation. *Sensory adaptation* is defined as a reduction of intensity in responsiveness of a receptor or an organ to a constant sensory stimulus; depending on the stimulus nature, there is, for example, color adaptation, light adaptation, or dark adaptation. Empirical evidence shows the presence of sensory adaptation in many senses, except for pain and loud sound (see Frederick & Loewenstein, 1999 for review). *Hedonic adaptation* similarly may be defined as a reduction in the affective intensity of favorable and unfavorable circumstances (Frederick & Loewenstein, 1999). The phenomenon of hedonic adaptation has in last decades been actively analyzed within the so-called *set-point paradigm*, which claims that even the most dramatic experiences, such as becoming disabled or winning a large sum in a lottery (Brickman, Coates, & Janoff-Bulman, 1978), have much less impact on subjective well-being (SWB) than might be expected. Adaptation as a reduction on response intensity draws close to the medical and physiological concept of *tolerance* (e.g., to drugs). Although sensory and hedonic adaptations often refer to the *process* of reducing in responsiveness intensity, it can also refer to the *state* of being adapted. All in all, the adaptation process aims at the restoring and maintaining of the homeostasis of the internal environment (i.e., an optimal condition of functioning); at that, the strength of regulatory processes that are employed in restoring the homeostasis depends on the gap between the respective current state and the equilibrium state.

#### Functions of Adaptation

Adaptation as a morphological or behavioral change in response to environmental demands is crucial for survival and reproduction of a population. Adaptation as a reduction of intensity in responsiveness also serves several functions. Firstly, a persistently strong hedonic state (positive or negative) may have detrimental physiological consequences. Secondly, it may divert the individual's resources away from other important domains; for example, in a highly adverse situation (e.g., painful romantic breakup), people experience strong emotional reactions, focus on them, and tend to ignore whatever else happens in other life domains, such as work or studies. Such a state of mind, when prolonged, might lead to an overall deterioration of functioning. Due to hedonic adaptation, however, we rescale our evaluation of the situation, start to reacknowledge the importance of subtle changes in various domains (e.g., success at work, improvement in financial situation), and become motivated to improve the overall situation (Frederick & Loewenstein, 1999). Thirdly, the effects of new events overwrite past ones, because new events provide new information which helps individuals in guiding their behavior and finally leads to more efficient functioning (Suh, Diener, & Fujita, 1996). Last, but not least, intense affective reactions may be dysfunctional, because they prevent other coping processes (cognitive and behavioral) from taking place (Dijksterhuis & Smith, 2002).

### Adaptation, Human Plasticity, and Resources

An individual's adaptation trajectory reflects the degree of *plasticity*. Plasticity refers to "the ability to adapt to changes in contextual circumstances, that is, to change with regard to specific aspects of the organism (e.g., traits) in order to preserve central characteristics of the organism, for example, environment-controlling capacities, general well-being, or health" (Staudinger, Marsiske, & Baltes, 1995, p. 810). The degree of plasticity depends on an individual's reserve capacity – the sum of resources available to the individual at any given time (Staudinger et al., 1995). Resources may be broadly defined as "material, social, or personal characteristics that a person possesses that he or she can use to make progress toward her or his personal goals" (Diener & Fujita, 1995, p. 926). Resources may include health, structural personality characteristics and regulatory processes, socioeconomic characteristics (i.e., income, education, and prestige), and social capital. Resources are crucial for regulating and maximizing well-being; resource change in the face of environmental challenges is a key operating mechanism by which well-being is influenced (Hobfoll, 2002). Resource-rich people are (a) less likely to encounter stressful circumstances that negatively affect well-being, (b) more capable of solving the problems inherent in stressful circumstances, and (c) less negatively affected by the resource drain that occurs in the face of stressful circumstances; moreover, resources form "caravans," that is, they are linked to other resources (see Hobfoll, 2002 for a comprehensive review of mechanisms, by which resources regulate well-being).

### Mechanisms of Psychological Adaptation

Several cognitive mechanisms lead to reduction in the responsiveness to a constantly exposed situation; these comprise change in aspirations, attending, finding an explanation, and reappraisal. *Change in aspirations* often occurs as a result of changes in the actual situation: for example, after receiving an increase in salary, people raise their material aspirations; thus, the gap between the aspirations and the actual state remains, preventing them from enjoying higher income (Easterlin, 1974). This idea is similar to the Kahneman's (1999) notion of the "satisfaction treadmill," which is linked to the adjustment of the comparison standard to the newly attained level. As the pleasure gained from some positive development increases, the aspiration level follows; in the end, people start to require this higher level in order to simply sustain their baseline happiness. Changes in aspirations can be regulated, though an individual may actively adjust the personal system of aspirations to the situation (e.g., by focusing on downward social comparisons and avoiding upward ones) in order to keep the gap between aspirations and achievements small and maintain the positive effect of a desirable development (Brandtstädter & Renner, 1992).

*Attending* is another mechanism, which is emphasized within several theoretical models of adaptation (e.g., AREA by Wilson & Gilbert, 2008, HAPNE by Lyubomirsky, 2011).

According to the AREA model (attend, react, explain, and adapt: Wilson & Gilbert, 2008), “the extent to which emotional events remain in focal attention, is a critical determinant of the speed of affective adaptation” (p. 371). Keeping attention on a positive change may be deliberate; this is a desirable activity that slows down adaptation to positive events. For example, in order to enjoy a good event longer, one might employ such strategy as expressing gratitude; with the help of this technique, the individual continues to attend to the positive event.

*Finding an explanation* for the event encompasses determining the causes and consequences of it as well as incorporating the event into one’s self-concept and the system of personal goals (Taylor, 1983; Wilson & Gilbert, 2008). Finding meaning in the experience fosters recovery from marital dissolution, death of spouse (Bonanno et al., 2002), or illness (Taylor, 1983). Interestingly, cognitions which help to explain the event do not necessarily need to be objective representations of reality; they may well be illusionary and still play a positive role for SWB (Taylor, 1983).

*Reappraisal* (e.g., Sirgy, 2002) implies reconsidering the importance of life domains according to one’s own successes and failures; for instance, a person can better adjust to a failure at work if she starts placing higher value on family or community involvement. Besides cognitive transformation techniques, fostering adaptation to negative events might be achieved by seeking social support, withdrawal, or self-reward (see Larsen & Prizmic, 2008, for review).

## Adaptation and Stress

Changes in organism’s internal and external environment constantly disrupt homeostasis; such changes are referred to as *stressor*. The *General Adaptive Syndrome (GAS)* is a reaction to a stressor, which aims at restoring homeostasis; this reaction, according to G. Selye (1982), comprises three stages: alarm reaction (i.e., the immediate “fight or flight” response, which prepares the organism for further actions), the stage of resistance (during which the organism *adapts* to the stressor by reducing the intensity of responsiveness), and the stage of exhaustion (which occurs in case of a prolonged exposure to the stressor and is characterized by exhaustion of one’s resistance capacities). The International Classification of Diseases (ICD-10) identifies a special group of stress-related disorders, namely, adjustment disorders (code F43.2) – “states of subjective distress and emotional disturbance, usually interfering with social functioning and performance, arising in the period of adaptation to a significant life change or a stressful life event” (WHO, 2008). Such disorders may manifest themselves in anxiety, perceived loss of control, depressed mood, and difficulties in coping with daily routine.

## Criteria and Measurement of Adaptation

Depending on how adaptation is defined and which agent is the subject of adaptation, different criteria and measures have been developed. For example, one could measure adaptation of an individual or of a whole population (society). On both levels – individual and societal (population) – objective and subjective measures may be used.

*Objective individual-level* measures of adaptation as both a state and a process include (a) a group of physiological reactions, like blood pressure (e.g., Cohen, Evans, Krantz, & Stokols, 1980) or level of cortisol, and (b) behavioral measures, such as undergoing (quitting) psychiatric (psychotherapeutic) treatment, or modified consumption preferences (Frederick & Loewenstein, 1999). Adaptation as a process of adjustment can be also measured by changes in performance on cognitive tasks; for example, academic achievements are used to measure adaptation among children-migrants (e.g., Aldous, 2006). Measures of adaptation as a reaction to environmental demands include, for example, migration as a reaction to climate change (Black, Bennett, Thomas, & Beddington, 2011) or to poor socioeconomic conditions.

*Subjective* (based on self-reports) *individual-level* indicators include (1) overall well-being measures, such as life satisfaction, happiness, affect balance scales (e.g., Suh et al., 1996), and depression scales (Bonanno et al., 2002; Burke, Shrout, & Bolger, 2007), (2) scales for the evaluation of discrete affective stimuli with regard to their valence (e.g., "positive–negative"), and (3) subjective evaluations of physiological states, such as pain thresholds and pain tolerance.

The implementation of evaluation scales (e.g., "positive–negative") into experimental studies of adaptation is based on the idea that affective habituation has taken place once affective stimuli are perceived as less extreme after multiple exposure. For example, in experiments on affective habituation to subliminal stimuli (e.g., Dijksterhuis & Smith, 2002), participants were exposed to extreme positive and negative words and later asked to evaluate them on a 7-point "positive–negative" scale, together with control words that had not been presented previously. The difference in evaluation is treated as an indicator of adaptation.

When overall SWB measures are used as proxies for adaptation in large-scale surveys, individuals may be asked to report their current state, like in the Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) or Experience Sampling (Scollon, Kim-Prieto, & Diener, 2003), recall past states, or form an aggregate judgment across a certain time span. The aggregated scores are not simple accumulations of the moment-based reports; they represent two distinct measures – moment-based and memory-based evaluations (Kahneman, 2004), which do not invalidate or substitute each other.

On the *population* or *societal* level, criteria of (mal)adaptation (as compliance with environmental demands) may include failure of a population to survive or reproduce itself as well as a proportion of the population "deeply dissatisfied with the status quo to threaten the viability of the society" (Egerton, 1992, p. 45). In the population genetics, the main criterion of adaptation is "fitness" – the ability of an individual to produce viable progeny or of an interbreeding population to reproduce itself (Corning, 2000). Fitness is measured by the *selection coefficient* – a measure of the extent to which natural selection is acting to reduce the relative contribution of a given genotype to the next generation (Ridley, 2004).

Societal-level subjective measures include aggregate indicators of happiness and life satisfaction.

## Cross-References

- ▶ Adaptation-Level Theory
- ▶ Evolutionary Threat Assessment System (ETAS) Theory
- ▶ Hedonic Adaptation
- ▶ Self-Regulation
- ▶ Set-Point Theory
- ▶ Social Indicators
- ▶ Stress
- ▶ Subjective Well-Being

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## Human Capital

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### Synonyms

Education; Human resources; Knowledge; Skills

### Definition

Human capital refers to "*the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social, and economic well-being*" (OECD, 2001).

### Description

Human capital is an economic concept (Becker, 1964). Throughout the history of economic thought, many economists have recognized the importance of expertise and knowledge on trade, production, and the general well-being of a society (Kiker, 1966). William Petty (1623–1687) is one of the first economists to estimate the monetary value of human beings. Later on, Adam Smith (1723–1760) explicitly recognized that the skills and abilities of men may be regarded as a form of fixed capital. To Smith, skills and abilities are thus not different from a machine that has a cost and generates a profit. The analogy between investment in physical capital and investment in human capital was fully developed many years later. Building on work by Fisher (1906) and Schultz (1961) laid the foundations for the modern analysis of human capital and analyzed educational expenditures as a form of investment. A few years later, Becker (1964), recipient of the 1992 Nobel Prize in Economics, developed extensively the theory of human capital and the foundations for an individual's decision to invest in education and training (see ▶ Human Capital Models). Since that time, the concept of human capital has attracted growing interest among education, health, and labor economists, as well as among economists in ▶ economic growth (Carnoy, 1975).

For human capital theory, abilities are not only innate but also acquired through learning practices. Investments in human capital start at birth. Effective parenting (see ▶ parental time and child well-being) during early childhood is a crucial step, since lack of stimulation during this period makes further development in human capital much more difficult. Children do not acquire knowledge only from their parents. Education and training in the formal schooling system (see ▶ educational system) is one of the most common types of investment in human capital. However, the accumulation of knowledge and skills does not end with the completion of formal schooling. Individuals continue to invest in human capital during their working life through on-the-job training, work experience, apprenticeship programs, and ▶ continuing education programs, among others.

Like physical capital, human capital depreciates. For example, individuals' skills and knowledge can decline with age or become obsolete due to technological advance and innovation. Since human capital is a renewable resource, refresher courses aimed at recalling and reinforcing previously acquired knowledge and skills, as well as advanced training designed to update knowledge, may offset the obsolescence of human capital. Human capital differs from physical capital in two important dimensions. First, human capital is embodied in individuals and cannot be transferred from one person to another. Second, human capital is not a liquid asset; otherwise stated, people can sell the economic services that their human capital renders, but not their human capital, except in conditions of human slavery.

Investments in human capital are costly for individuals and their families. The costs incurred by the individual consist of opportunity costs, which are measured by the forgone earnings while studying, and direct training costs (fees and payments to training providers, books, and other materials). Investments in human capital are also costly for the society that finances most of the costs of delivering education services.

Individuals choose to invest in human capital, by means of education, training, or other activities, because they expect compensation or benefits in the future. Benefits to individuals are known as private benefits; among those benefits, the economic literature distinguishes direct and indirect pecuniary benefits from nonpecuniary benefits. As far as pecuniary benefits are concerned, there is evidence that investments in human capital improve workforce quality and are reflected in increased earnings in the labor market. These higher private earnings, however, are only part of the picture because human capital investments also yield indirect monetary gains. To illustrate, individuals with more education are better equipped than their peers to make savings decisions and to obtain financial returns. Other indirect monetary gains are also obtained in the labor market. As an example, individuals with higher ▶ educational attainment generally have a better chance of employment and enjoy better labor market opportunities.

The benefits to human capital investments include a wide range of private nonpecuniary gains and externalities; these benefits are much more difficult to quantify than the monetary gains described above. Some nonmonetary benefits occur during the process of learning itself. For example, students may value higher education for the direct satisfaction it provides as consumption good and for the utility they may receive as a result of the time spent obtaining a higher education. It is widely recognized that human capital investments also alter consumer preferences, tend to foster the adoption of new consumer products, stimulate the appreciation of arts and culture, and contribute to greater happiness and satisfaction. Individuals with higher educational attainment are also more able to think critically and to understand the value of democracy as a form of government. There is strong evidence that individuals with more education have healthier habits and lifestyles and that education also improves the health of family members (Grossman, 2006). Numerous empirical studies have shown that female education has a strong negative impact on fertility, significantly reduces infant and child mortality, and contributes to the further education of the child (Angrist & Lavy, 1996). Other private nonpecuniary benefits are obtained in the labor market. To illustrate, individuals with higher educational attainment generally enjoy greater overall ▶ job satisfaction (Oreopoulos & Salvanes, 2009).

Human capital provides benefits not only to those individuals who invest in education and training but also to the society as a whole. These benefits are known as social benefits. Economists have paid a great deal of attention to the contribution of human capital investments to economic growth and their impact on the adoption of new technology (Barro, 1991; Denison, 1964). In addition to this, investments in human capital generate myriad other social benefits and externalities. To illustrate, investments in education help to reduce crime rates in society (Lochner, 2004). They also improve citizens' political behavior and are crucial for the development of democracy, liberty, and equality. Investments in education and training increase ▶ social mobility and are powerful tools in the struggle for ▶ equity and ▶ social justice. Because education improves an individual's own health, it reduces the cost of medical care and consequently the amount of public expenditures allocated to the health system.

Measuring the stock of human capital has been, and still is, a major concern in empirical research. While some economists use literacy rates, school enrollment rates by level of education, or test scores to estimate human capital investment, others use the ratio of skilled adults to total adults or the average years of schooling in the adult population as a proxy for the stock of human capital. Alongside these indicators that approximate human capital investments through educational attainment, the empirical research has provided other measures based on the costs of educational investments, such as spending per pupil by level of education, percentage of GDP allocated to the education sector, or the amount of private and public expenditures for education (OECD, 2001). However, all of these standard measures have shortcomings, since they focus solely on one of the many components of human capital investments, namely, formal education in the school system. In order to gain a fuller picture, it is necessary to take into account the other forms of investment in human capital. However, providing a more comprehensive measure of the concept of human capital is a difficult task since it requires finding suitable empirical counterparts to human capital acquired outside the schooling system, such as nonformal education, on-the-job training, or ▶ health care. The United Nation's ▶ Human Development Index (2000) seeks to overcome some of these shortcomings. It measures overall achievements in three key facets of ▶ human development – health, knowledge, and standard of living – including variables such as ▶ life expectancy at birth, educational attainment of the population, and GDP per capita. The European Human Capital Index elaborated by the Lisbon Council (2006) is another attempt to measure investment in knowledge and education in different countries. The index seeks to quantify the way human capital is developed over the course of a person's lifetime. It takes into account the investment realized in various types of human capital development, including formal schooling, learning on the job, adult education, and parental education, measuring each of these components either in terms of direct expenditures or in terms of opportunity cost.

## Cross-References

- ▶ Continuing Education
- ▶ Economic Growth
- ▶ Education
- ▶ Educational Attainment
- ▶ Educational System
- ▶ Equity
- ▶ Health Care
- ▶ Health Systems
- ▶ Human Capital Models
- ▶ Human Development
- ▶ Human Development Index
- ▶ Job Satisfaction
- ▶ Life Expectancy
- ▶ Opportunity Cost
- ▶ Parental Time and Child Well-Being
- ▶ Public Expenditure
- ▶ School Enrollment
- ▶ Social Justice
- ▶ Social Mobility
- ▶ Training

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# Human Capital Models

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## Synonyms

Demand for education; Earnings model; Returns to education and post-school investments

## Definition

The conventional models of ▶ human capital explain an individual's decision to invest in education and ▶ training during his or her working life, considering the earnings benefits of education.

## Description

In his seminal book, *Human Capital*, Becker (1964) develops a theory of investment in human capital and introduces the rate of return to education as the main determinant of the demand for education and training. He also makes a valuable distinction between general training, which is useful in more than one firm, and firm-specific training, which increases ▶ productivity only in the firm where it was acquired. Building on the dynamic human capital investment model of Ben-Porath (1967) and the work by Becker and Chiswick (1966) on the distribution of earnings, Mincer (1974) models the relationship between earnings, schooling, and work experience or on-the-job training. This model is known today as the Mincer earnings function. Meanwhile, Psacharopoulos (1973) helped to popularize the concept of internal rate of return to education and its use in informing education policy decisions. Over the last 40 years, a very large number of empirical studies have been conducted on the returns to education and work experience in both high- and low-income countries (see ▶ Developing Countries).

Under the human capital theory, investments in education improve labor productivity. In a competitive labor market, wages are equal to the value of the marginal product of labor; therefore, employers pay, on average, higher wages to workers with higher ▶ educational attainment. In evaluating the profitability of education, the standard human capital model considers only the earnings benefits of education.

For the human capital theory, the rate of return is the most important determinant of the amount invested in education and training by an individual and a society. The rate of return of an investment in education is the discount rate at which the present value of the costs incurred during the study period and the present value of the earnings streams generated by the investment in education and training become equal (see ▶ Cost-benefit Analysis). The following formula is used to calculate the rate of returns:

$$\Sigma^{\mathrm{T}}\left[(w_t - c_t)/(1+r)^t\right] = 0$$

where $c_t$ are the costs in period $t$, $w_t$ are earnings expected in period $t$, $T$ is retirement age, and $r$ is the internal rate of return to education. At the optimum, an individual (a society) would invest in an additional year of schooling if the private (social) rate of return, $r$, exceeds the market interest rate or if that rate of return is at least equal to that of other alternatives. In practice, the private rate of return combines data on earnings by age and level of education with data on ▶ opportunity cost and direct private costs. The social rate of return is based on the same streams of expected earnings as the private of return, but corrected for income taxes; costs include the public expenditures allocated to education plus the private costs.

An alternative approach to estimating the private rate of return to education is to use the Mincer earnings function (Mincer, 1974), which links individuals' earnings to schooling and post-school investments in human capital. In mathematical form, the standard Mincerian model is expressed as follows:

$$\ln w_i = rs_i + \delta t_i + \gamma t^2{}_i + u_i$$

where $\ln w_i$ stands for the natural logarithm of labor market earnings for individual $i$, $s_i$ represents years of schooling, $t_i$ measures post-school human capital investments proxied by work experience, and $u_i$ is a random error term that captures all of the unobserved factors that affect earnings. In most empirical studies, labor force experience is calculated as an individual's age minus years of formal schooling minus age when school starts. Potential experience is also entered quadratically in the traditional Mincerian model to account for the concavity of the typical lifetime earnings profile with respect to experience. The concavity in experience of the earnings function implies that (a) workers continue to invest in human capital after the formal schooling period, (b) investment in human capital declines as years of experience increase because investments occurring later in an individual's working life are less profitable, and (c) the stock of human capital depreciates at the end of working life. When private costs are negligible, the coefficient $r$ is the private rate of return to education. In the simplified version of the earnings function described here, this return is constant for each additional year of schooling; this constraint can be easily relaxed by breaking down, for example, the total number of years of education into different levels of education. The return to work experience is given by the coefficients on $t$ and $t^2$; a positive coefficient on $t$ and a negative coefficient on $t^2$ indicate a diminishing rate of return of post-school investment in human capital.

Mincer's model is extensively used in the empirical literature on the returns to human capital investments. Over the last 30 years, the emergence of new econometrics methods and the availability of detailed microeconomic data have allowed significant progress in the estimation of the earnings function and, consequently, in the evaluation of the returns to education. The main improvements involve, for example, controlling the wage-generating process for individuals' ability (Griliches, 1977), taking into account the endogeneity of schooling, or correcting for the selectivity bias arising from individuals' employment decisions (Card, 2000). Beyond that, extended versions of the Mincer earnings function are commonly used by education and labor economists to study, for example, the gender-wage gap (see ▶ gender discrimination), the earnings differential in the public and private sectors, the race earnings differential, or the impact of school quality on earnings.

Private and social rates of return to education have been estimated for a large number of countries. The latest review of the literature (Psacharopoulos & Patrinos, 2004) shows that private returns exceed social returns; however, special care is needed when interpreting this pattern because the estimates of the social returns do not really include the social benefits of education. A noteworthy feature in the empirical research is that the private rates of return to primary education are higher than those to secondary and higher education, on average. The empirical evidence also shows that the profitability of educational investments is higher in developing countries than in more advanced countries. Noteworthy too is that in many countries, and especially in Francophone Sub-Saharan African countries, the returns to education are, on average, higher in the public sector than in the private sector. Analyses by gender indicate that although women are paid less than men, overall they receive higher returns to education than men.

Since its origin, the human capital model has attracted much criticism and generated lively debates among economists. The most basic criticism stems from the assumption of a direct relationship between investments in education, training, work experience, and the marginal productivity of labor. By the 1970s, several authors had developed alternative theories that challenged the very foundations of the human capital model. At that time, these alternative theories stimulated research on human capital, but they failed to displace the basic human capital model that is still dominant among economists today. Among these theoretical frameworks, the screening models (Arrow, 1973; Spence, 1973) argue that education does not raise the productivity of workers but simply acts as a signal that enables employers to identify workers who have higher innate abilities. The job competition model (Thurow & Lucas, 1972) argues that productivity is a characteristic of the job rather than an attribute of the worker. Consequently, wages are paid based on the characteristics of the job rather than the characteristics of the worker. Employers use educational attainment as a proxy for those characteristics and hire workers who presumably require less in-service training than others.

## Cross-References

- ▶ Cost-Benefit Analysis
- ▶ Developing Countries
- ▶ Education
- ▶ Educational Attainment
- ▶ Gender Discrimination
- ▶ Human Capital
- ▶ Opportunity Cost
- ▶ Productivity
- ▶ Public Expenditure
- ▶ Training

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# Human Cost of Drought

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## Synonyms

Social (including psychological), economic, and environmental implications of drought and prolonged drying events

## Definition

Measuring the human cost of drought is difficult, but most commonly it is classified by the types of impacts that can affect our ▶ well-being, livelihood, and amenity. These types of impacts are further classified as economic, environmental, and social.

## Description

The impacts of drought on human society and its well-being can be devastating if not well understood and appropriate coping strategies put in place. Most important is recognizing that the experience of drought can differ significantly between geographic regions and within the same country. Thus, understanding regional specificity remains key to addressing not only the effects of drought but also to building communities that are resilient in the face of ongoing climate extremes. To accurately capture the dynamic and locally specific nature of vulnerability to drought, an in-depth and integrated consideration of local environments, individuals, communities, institutions, and governance frameworks is required.

Drawing on locally situated knowledge can often give researchers a more nuanced picture of how communities are coping under drought conditions. Case studies of specific towns and their populations have been conducted using qualitative methods including surveys and interviews to explore the parameters of drought effects and their impacts on local community dynamics and economic and social being. Research focusing on small rural towns is therefore crucial to our understanding of the human cost of drought as these places represent the context in which the impacts of drought are often the most severe and where government programs addressing drought impacts will usually be targeted.

Recent work in Australia for the National Climate Change Adaptation Research Facility (NCCARF) has examined how the effects of drought and associated heat waves have impacted upon the lives of various rural communities in the states of New South Wales, Victoria, South

Australia, and Western Australia. Likewise, other facilities such as the National Drought Mitigation Center in the USA, the European Drought Centre, and a myriad of other international agencies are all researching the impacts of drought and ways to mitigate its effects in specific localities. These types of studies not only help researchers expand their understanding of drought and its multiple indicators but also increase their knowledge of how issues such as reduced water supply, increasing agricultural costs, farm succession, and cumulative uncertainty are affecting the ongoing viability of people living off the land in drought-affected rural regions. The complex interrelations between these issues can be seen in the recent “Millennium Drought” or “the Big Dry” which affected South Eastern Australia from the mid-1990s until late 2009.

## Drought and More: Decline and Change in Rural Australia

Small rural towns in ► Australia (generally defined as those with population levels of approximately 50,000 or less) have experienced a diverse set of challenges arising from changing climates, agricultural industries, and rural demographics. With the widespread dominance of agricultural-based economies in these regions, the recent prolonged drought had severe impacts on many forms of agricultural production due to associated declines in water availability and supply. As a consequence, the drought impacted on the economic viability of many farms and farming businesses. Estimates by the Australian Bureau of Agricultural and Resource Economics (ABARE, now known as ABARES to include “Science” under its purview) stated that the drought resulted in a decrease in average farm incomes of $A29, 000 from 2005 to 2007 and an increase in negative cash farm income from 24 % to 42 % over the same period (ABARE, 2008). Further declines in future water availability and supply projected for these already drought-affected areas mean that they face considerable and ongoing challenges to their agricultural base and economic well-being (see CSIRO-BoM, 2007; Gunasekera, Kim, Tulloh, & Ford, 2007).

In addition, rural towns have been confronted with a suite of rapid changes to the agricultural and farming sector characterized by increases in farm size, declines in the traditional family farm, increasing competition, and global market pressures. While the contribution of the agricultural sector to the gross domestic product (GDP) has decreased significantly over the last 50 years, agricultural output has almost doubled since its 1974–1975 level (ABS, 2009a). To achieve this growth in productivity, the size and technological advancement of farms continues to increase rapidly, with an associated decrease in actual farm numbers and farm employment (ABS, 2009b) – a trend Barr (2005) describes as “get big or get out.” This trend has impacted on the long-running traditions of the family farm in rural Australia, with significant decreases in family succession of farms as they are “bought out” and amalgamated into large-scale enterprises.

A continuing loss of the traditional family farm across rural Australia has also coincided with significant social and demographic change. Overall, the populations of farming regions are declining rapidly and are also increasingly characterized by ageing populations, decreasing family incomes, low educational attainment and opportunities, and a drifting workforce and skills base (McGuirk & Argent, 2011). Such sociodemographic shifts have been directly linked with decreases in economic viability, business opportunities, agricultural production, ► health and well-being indicators, educational opportunities, and key services (BRS, 2008). Within these often close-knit rural settings, such changes to the social and economic foundations of communities can seriously confront their identity. Many of these same communities were once the centers of vibrant local agricultural production, resource distribution, communication, and transport, yet now have populations on the cusp of viability (Forth, 2001).

It is in these strained contexts that rural towns have been experiencing drought. The exact relationship between drought and other forms of rural change is often difficult to disentangle; yet it is clear that the difficulties currently experienced by small rural towns can be both strengthened and exacerbated by drought events. Traditional drought policies promoting disaster management are not capable of dealing with the complex contexts in which prolonged and recurring drought events unfold (Drought Policy Review Expert Social Panel, 2008). Thus, it is crucial to research small rural towns as the contexts in which the impacts of drought are often the most severe and where government programs addressing drought impacts will usually be targeted. Rural towns in Australia and worldwide confront extreme uncertainty which often goes well beyond the immediate effects of drought. Therefore, it is in these drought-sensitive locations where insights into what to change, what to cease, and how to think and learn about drought are most likely to be developed (Golding and Campbell, 2009).

## Case Study Examples: Mildura and Donald in Rural Victoria, Australia

A recent study of the small rural towns of Mildura and Donald (see Kiem et al., 2010) supports claims that a combined melee of rural change occurring concurrently with an extended period of drought caused overwhelming concern in the agricultural regions of South Eastern Australia. In the towns of Mildura and Donald specifically, drought was experienced in several different ways. For Mildura (a fruit- and wine-growing region), drought affected the health of the Murray River (the third longest navigable river in the world – 2,520 km in length), the water supply, and the security of its irrigated agriculture. For Donald, a grain-growing agricultural region that relies almost solely on rainfall and where prolonged drying had been a regular occurrence since the mid-1990s, drought had become “the new normal.” The many issues that interact with drought impacts and inflict significant human costs in both regions are outlined in greater detail below.

### Water Supply

Mildura’s irrigation districts experienced some of the most devastating and influential effects of drought as the community had to come to terms with unprecedented declines in water supply and security due to both physical decline and the introduction of a new government-imposed water trading scheme. As a result, farmers were faced with learning how to cope with declining water allocations, while also navigating and managing a water market of tradeable and saleable water unbundled from the land. The rapidity and volatility of the water deregulation resulted in varied experiences from confusion, inconsistency, and outright resentment through to experimentation and learning.

Many farmers lost considerable amounts of money in the initially uncertain and highly fluctuating water market and allocation system. The most notable was the immense change in thinking and farm planning required to deal with these rapid changes, as farmers increasingly tried to anticipate potential water losses, the cost of water versus the value of crops, and the declining value of land now unaccompanied by water – a process that saw many people exit farming entirely. On the other hand, water trading was also the savior of many businesses, providing opportunities for the management of risks that previously did not exist.

Traditionally there have always been a deep ► attachment to the Murray River in Mildura and a recognition of the immense value of water to local livelihoods – economically, socially, and psychologically. Mildura residents spoke with great sadness about the decline and drying of the river and surrounding areas, and the impact of this decline on the well-being of the community. While there was considerable resentment from some farmers who remained attached to traditions of perpetual irrigation supply, there were also attachments to the river and a respect for water engrained in this rural community that provided potential for ► adaptation and change in the region. People’s close relationship with the river and water thus presented opportunities for nurturing new understandings of the variable and most likely reduced availability of water. Such a change in thinking around water, its value, and availability will be essential under the projected continued drying of this region into the future.

For the dryland farming areas of Donald, periods of insufficient and insecure water supply are customary, and most farming communities in the area consider themselves to be adept at managing and living with limited rainfall. However, simultaneously, they also have a deep and abiding respect for water and its place in supporting individual and ► community well-being. In the drylands surrounding Donald, water is recognized as important for the well-being and "sanity" of people living and working there. Water is also viewed as fundamental to the social life and economic activities that sustain small dryland communities. It is this social element of water that needs to be addressed and valued as part of future policies governing water delivery and supply to these dryland communities.

As previously stated, however, it was not just drought confronting these regions. Exacerbating the issues of water security and supply brought on by the drought was the complexity of the agricultural industry and its associated economics, as well as rural demographic changes that were occurring across both regions and many others like them globally.

### Fluctuating Commodity Prices

Changes presented by declining and fluctuating commodity prices caused great hardship for both regions. Mildura perhaps suffered the most due to the large amount of bulk wine grape production that occurred in the region – an industry that experienced massive declines in global commodity prices due to a glut in the market. With such a high proportion of wine grape producers present in the region, the severe downturn in the industry had resounding effects on business profit and viability. With the added pressure of drought, this led to people exiting the industry and a reduction in the productive capability of the region as a whole.

Unlike Mildura, in the dryland areas of Donald, the problems of commodity prices were not the result of a commodity glut, but rather the disbanding of the sector's marketing arm. In the cropping sector, farmers had to adjust to selling grain without the aid of the "single desk" of the Australian Wheat Board (AWB) which represented a central body through which to market grain globally. Under recent wheat market reforms, the single desk was replaced by a free market system of marketing and exporting grain. In the face of already declining commodity prices and the intensity of the "Big Dry," this shift placed added pressure on farmers, as they were suddenly responsible for the marketing and selling of the grain as well as growing it. This had obvious flow-on effects with farmers spending less time with their families and less time participating in community and social events.

### Shifts in the Farming Sector

Both irrigated and dryland regions were also confronted by shifts in the farming sector more broadly – some of these were related to issues of drought, while others were part of the sector's response to changing global markets and rural demographic shifts. The rise of the large amalgamated farm and multinational agribusiness loomed large in local communities' minds as a factor inducing uncertainty. The flow-on effects of farms growing larger and more technologically advanced to gain economies of scale are immense, impacting on both the composition of farms and farming communities and associated with the decline of the traditional family farm and farm succession. Moreover, as farms increase in size and sophistication, the ability of farmers to work together, employ local workers, and use local agricultural services diminishes. The compounding nature of these transformations progressively carves out new and uncharted farming landscapes across regions and new scenarios into which drought impacts now play.

### Demographic Change

Rural demographic shifts have accelerated these changing farming landscapes. Rural communities in general are increasingly characterized by declining and ageing populations, decreases in young people, and an influx of retirees, immigrants, and people from disadvantaged socioeconomic circumstances seeking access to low-cost housing and employment (McGuirk & Argent, 2011). These shifts have introduced potential problems that – even without the added pressures of drought, pricing, and farming industry changes – would threaten the future of some smaller rural communities across these regions.

The pressures of demographic change are particularly evident in and around Donald, which does not have the diverse economic base and rural riverside amenity of Mildura. The Donald community continues to decline and age, thereby putting immense pressures not only on the traditions of family farm succession but also on the viability of local businesses and service providers. At present, many smaller rural towns are declining with little attention being paid to how to manage these transitions in a dignified and supportive manner. As their resilience is worn-down, the human cost of drought – even where it is a habituated event – can be heightened.

## Economic Costs

For people living and working in Mildura and Donald, the impact of drought was never separable from the immense economic and social impacts of the ongoing aggregation of issues confronting farming communities. Economically, many farms experienced dwindling financial returns and reserves after many years of drought and low commodity prices. This had the combined effect of decreasing cash surplus and everyday spending (which also impacts on local businesses) and increasing the strain of ongoing and accumulating debts. Indeed, many families today are no longer in a position to borrow funds, which impedes their ability to change and adapt via new technologies or crops. Moreover, although traditionally asset rich, farmers now confront the increasing strain of farm debt, magnified by a changing farming sector that remains associated with increased costs to stay competitive (e.g., technology, fertilizer, water efficiency, and the cost of water itself) and shifting land and water regulations. For many, the farm was regarded as their last asset (i.e., their superannuation or pension fund), yet land values were greatly depleted under the drought conditions, and as a result, the financial future of many farmers remains uncertain.

As a consequence, many farming families sought to diversify their income base through secondary or off-farm employment. This may offer an effective short-term solution to some of these financial strains. However, it potentially enhances the narrow focus on economic survival and limits more strategic financial and farm planning. Moreover, the adoption of secondary employment puts an increasing strain on ► family relationships, as farmers, their partners, and/or their children are working more hours – often away from home – to cover daily expenses.

For many farmers, their focus has been narrowed to economic survival: to "holding on." In Mildura, due to an extreme crash in wine grape prices, this economic survival has widely been fed by an increasing reliance on government financial assistance. Indeed, many of those working in support services described a burgeoning "welfare industry" in the Mildura region, created and sustained by reactive government support programs. For Donald, however, this economic survival was recognized as more of a "breakeven" point. Income assistance was relatively new to this area, with farmers holding on to properties rather than exiting, in the hope of better years ahead. Although possibly demonstrating a better picture of economic health, this type of situation does not support investment, adaptation, or long-term planning for the future. At best, there are significant opportunities for proactive action in these dryland regions to avoid the looming "welfare disaster" presented by Mildura. It is important to note, however, that the financial position of many farmers is such that, even when the pressures of drought eased in 2009, the financial stress on farming families and rural communities continue due to low commodity prices and large debt levels.

## Social Costs

Arising from these economic effects and compounding them are the extensive social impacts created by the "drought-and-more" conditions confronting these regions. Farmers in the industry and others associated with it now acknowledge the mounting social issues as pressures of drought, markets, and commodity prices continue to distress the community as a whole. Anecdotal and qualitative evidence suggests that farmers increasingly are suffering from depression and emotional exhaustion from the ongoing uncertainty and stress of farming in the shadow of "drought and more" (Sherval & Askew, 2012). They continue to feel overwhelmed and isolated with their own problems, and many are hard to reach, both due to their "resilient ethos" and their geographically remote location. As a result, professional service providers have reported increased incidence of depression and ▶ anxiety, suicide, separation and relationship dissolution, grief and feelings of loss and shame, and withdrawal from the community and social activities.

The impacts of these social strains continue to be felt in families and throughout the community as a whole. Children are increasingly deprived of essentials and educational opportunities and experience the pressures placed on their parents. Moreover, the educational and training opportunities for farmers are also impeded, with increasing pressures of time, money, and exhaustion limiting farmers' participation in training programs. For communities, the subsequent withdrawal of farmers and farming families into their own problems can often result in decreasing participation in community events and other recreational activities vital to the well-being of all rural communities.

In the context of enduring drought, such as the "Big Dry," these immense social impacts become chronic, exhausting the resources of farming communities to foster community strength and togetherness in the face of further long-term climatic and farming industry changes. Strategic and multiagency responses are therefore required from governments to be able to address what appear to be serious declines in psychological and social well-being in these regions, particularly through increasing support for rural outreach services to ensure that incidences of declining health and social well-being do not continue to go untreated.

## The Future

The future of rural communities can look grim. Nonetheless, people have a view of their future that recognizes the immense challenges faced yet offers alternative visions and strategic plans for ongoing survival. Many imagine very different futures, where isolation and service demands are managed through technology, and alternative industries and energies offer a sustainable and economically viable way forward for their towns. There are strong attachments between the people, the land, and their community in these regions. Rural communities remain confident of their future, even if that future does not necessarily involve farming (this was more the case for Mildura than for Donald). Thus, the rural town and its close and abiding connections can still provide opportunities to build and adapt to new futures.

## Overall Conclusions

In relation to drought more generally, understanding the vulnerability of people and environments is vital for developing and supporting effective drought preparedness. For government, nongovernment organizations (NGOs), and researchers working in this area, given the unfolding nature of climate and rural change, the challenges remain extensive. Critical health and well-being needs are evident and require immediate support though it is often the traditional emphasis on "short-term" crisis-management responses that have created and exacerbated many of the problems facing drought-affected farming regions and their communities worldwide. As such, with current debates and major policy reviews globally questioning the effectiveness, equity, and long-term outcomes of drought and climate change policies, it is a crucial moment at which to examine these policies as part of, and in relation to, everyday drought-affected contexts.

Social capital may also be a key component in this evolving debate. Made up of (1) frequency of, breadth of and satisfaction with different forms of ▶ community participation and (2) the ▶ social cohesion (▶ norms, ▶ trust, reciprocity, ▶ sense of belonging) engendered by high levels of participation (Berry & Welsh, 2010), social capital is one key ▶ mediator of the relationships between drought, climate change, social impacts, and health and well-being (Berry, Bowen, & Kjellstrom, 2010). Social capital is also socially patterned, with higher levels of participation, social cohesion, and access to resources predominant among the advantaged, while noticeably lacking among the disadvantaged (Berry 2009a, 2009b). It is argued therefore that to capture the dynamic and locally specific nature of vulnerability to drought, an in-depth and integrated consideration of local environments, individuals, communities, institutions, and governance frameworks is required. Practical outcomes can only be achieved through influencing these types of contexts and processes to enhance individuals and communities' ability to cope and adapt to drought and ongoing climate change events.

## Cross-References

- ▶ Attachment
- ▶ Australia, Quality of Life
- ▶ Indicators, Quality of Life
- ▶ Well-being

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# Human Development

▶ United Nations Development Programme

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# Human Development and Capabilities in the USA

▶ Capability Deprivation in the USA

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# Human Development Index

▶ Reporting of Indices by the Press

## Human Development Index (HDI)

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### Definition

The Human Development Index (HDI) is a composite indicator of what may be considered "human development." Its stated purpose is "to shift the focus of development economics towards people-centered policies" (ul Haq, 1995). The composition of the HDI has changed several times since its introduction in 1990. The *HDI of 2010* is the geometric mean of three compound social indicators, viz., the Life Expectancy Index, the Education Index, and the Income Index (United Nations Development Programme, 2010) (The geometric mean of n positive numbers is the nth root of their product). In turn, those three indices are defined as follows. The *Life Expectancy Index* is the life expectancy at birth, normalized to the range from 20 years to 83.2 years. The *Education Index* is the geometric mean of the Mean Years of Schooling Index and the Expected Years of Schooling Index; these latter indices are normalized to the ranges from 0 years to 13.2 years and 0 years to 20.6 years, respectively. The *Income Index* is the logarithm of the gross national income per capita G expressed in purchasing-power parity dollars normalized to the range from log(163) to log(108,211).

### Description

Thus, the HDI of 2010 is a mapping onto the interval from zero to unity of four social statistics and ten parameters that have been selected to reflect a concept of human development with three dimensions: longevity, education, and income. Annually since its inception in 1990, the HDI has been used to rank the nations of the world and assign them to categories of low, middle, and high human development. The HDI can also be calculated for states, provinces, and other polities.

### Reliability

The HDI is reliable, in the sense that it rests on well-defined statistics. The most uncertain component statistic is the population, which may be in error by several percent. Accordingly, the HDI is uncertain in the third decimal, which can affect the rankings (Lind, 2004).

### Validity

No assessment of the validity of the HDI as a measure of what can be called "human development" appears to have been published. In essence, the HDI provides one definition of the term.

### Discussion

In serving to shift the focus to people-centered policy, the HDI has been very successful. It is much cited in the press. However, it has also been widely criticized on numerous grounds: failing to reflect ecological considerations, reflecting mainly material aspects of development, ignoring moral development, adding little to the value of its component indices, failing to address development from a global perspective, failing to capture the essence it seeks to portray, assessing development differently in different countries, focusing on ranking, lacking diachronic comparability, measuring aspects of development already exhaustively studied, serving to legitimize an arbitrary weighting of some aspects of development, etc. (Lind, 2004; Sagara & Najam, 1998). Some of these critiques unfairly expect the HDI to do what was never intended. Others have been dealt with gradually in the changes to the index over the years. For yet others, there are simple remedies (Lind, 2010).

Perhaps the HDI's most serious shortcoming is that it is normalized to the unit interval (Caplan, 2009). There are many countries whose Human Development Index is very high, so close to unity that the index cannot go any further. This would suggest that there is no more room for human development in those countries.

## Cross-References

- ▶ Calibrated Development Index
- ▶ Social Development Index (SDI)

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# Human Development Inequality

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## Synonyms

Distribution-sensitive human development index; Gender-related human development index; GHK; Gini-corrected human development index; Inequality-adjusted human development index; Quintile-specific indexes

## Definition

Human development usually refers to the progress of a group of people, for instance, the population of a country, in terms of a broader set of indicators of well-being, i.e., not just income, wealth, or consumption. Probably the most well-known measure of human development is the United Nation's "▶ human development index" (HDI), which is a composite index that measures the average achievement in a country in three basic dimensions of human development: a long and healthy life, as measured by life expectancy at birth; knowledge, as measured by the adult literacy rate and the combined gross enrolment ratio for primary, secondary, and tertiary schools; and a decent standard of living, as measured by (the log of) GDP per capita in purchasing power parity US dollars (United Nations Development Programme [UNDP], 2011). Human development inequality refers to the extent to which the achievements along these dimensions differ across the people in a given group.

## Description

### The Human Development Index (HDI)

The most frequently used measure of ▶ human development, the "▶ human development index" (HDI), is often criticized because it only looks at average achievements in a given group of people and, thus, does not take into account the distribution of human development within a country's population (see, e.g., Sagar & Najam 1998). This implies to ignore the differences which exist within a population along the different dimensions of this composite measure. There is empirical evidence that mortality as well as educational attainment vary with income and wealth in both rich and poor countries (see, e.g., Cutler, Deaton, and Lleras-Muney (2006) and Filmer and Pritchett (1999)). The main reason for the unique focus on the population mean is the limited data availability on the distribution of human development achievements. Household income surveys are today widely undertaken and, hence, provide data on income distribution, but it is more difficult to get data on inequality in life expectancy, educational achievements, and literacy.

### Attempts to Integrate Inequality into the HDI

In the past, several attempts have been made to integrate inequality into the human development index. Anand and Sen (1992) and Hicks (1997) suggested to discount each dimension index by one minus the ► Gini coefficient (a widely used measure of statistical dispersion) for that dimension before the arithmetic mean over all three is taken. Therefore, high inequality in one dimension lowers the index value for that dimension and, hence, its contribution to the HDI. Although the idea of such a discount factor is rather intuitive, the Gini-corrected HDI has not been widely used. One reason might be that it is conceptionally unclear and empirically very difficult to calculate a Gini coefficient for life expectancy. Another reason might be that it is not clear how to interpret the interaction between the Gini coefficient and the average achievement in a component and across components. The gender-related development index, or GDI, was another attempt in that direction. Its motivation was the 1995 Human Development Report's emphasis on gender inequalities. The GDI adjusts the HDI downward by existing gender inequalities in life expectancy, education, and incomes. The GDI calculates each dimension index separately for men and women and then combines both by taking the harmonic mean, penalizing differences in achievement between men and women. The overall GDI is then calculated by combining the three gender-adjusted dimension indices by taking the arithmetic mean (UNDP, 2009). Another attempt was undertaken by Foster, López-Calva, and Szekely (2005). They chose an axiomatic approach to derive a distribution-sensitive HDI. They suggested a three-step procedure. First, each dimension index is calculated on the lowest possible aggregation level, given the data availability, for instance, income at the level of households and life expectancy at the level of municipalities. Second, for each dimension, an overall index is computed by taking the generalized mean, allowing the user to vary the level of inequality aversion. Third, the overall HDI is computed by taking again the generalized mean instead of the simple arithmetic mean. The advantage of this approach is its axiomatic foundation. For instance, the index is decomposable by subgroups, which is not the case for the Gini-corrected HDI. The problem with this approach is, however, that the generalized mean may not seem very intuitive for many users of the HDI. It obviously also raises the question of how to determine the "right" inequality aversion parameter. However, since 2010 ► UNDP publishes the inequality-adjusted human development index (IHDI). For the aggregation on each level as well as overall, the geometric mean is used. Inequality in life expectancy refers to inequality across age cohorts (see UNDP, 2011). A different approach has been proposed by Grimm, Harttgen, Klasen, and Misselhorn (2008) and Grimm et al. (2010) ("GHK" hereafter). They focus on inequality in human development across the income distribution. Instead of incorporating directly into the HDI the aggregate well-being costs associated with existing inequalities, they rather generate a separate HDI for different segments of the income distribution. More precisely, they take household-level information on income and demographics to compute the three dimension indices for quintiles of the income distribution. This allows to track the progress in human development separately for "the poor" and "nonpoor" and to compare the level of human development of the poor to the level of the average population and the level of the nonpoor. The remainder of this description focuses on this concept. First, it is briefly explained how this inequality-sensitive measure of human development is constructed. Then the measure is illustrated using a sample of 32 developing and industrialized countries.

### Human Development Across the Income Distribution

For developing countries, GHK use household income surveys ("HIS" hereafter, e.g., the World Bank's Living Standard Measurement

Surveys) to calculate the quintile-specific education and GDP indices and Demographic and Health Surveys ("DHS" hereafter) to calculate the quintile-specific life expectancy index. Given that generally both surveys do not interview the same households and that the DHS does not contain any information on household income or household expenditure, household income is approximated by an asset index. This index is based on the information about the ownership of a radio, TV, refrigerator, bicycle, motorized, vehicle, floor material of housing, type of toilet, type of water source, and so on. This information is then aggregated into a single metric index for each household using principal component analysis.

### Inequality in Life Expectancy

To calculate a life expectancy index by asset quintile – income quintile hereafter – information on under-one child mortality taken from the DHS is combined with model life tables. Model life tables are based on historical mortality data for many countries and periods and can reflect the empirical relationship between life expectancy, $e$, and the under-one mortality rate (Ledermann, 1969). The quintile-specific life expectancy index, $L^Q$, can then be calculated using the usual minimum and maximum values for life expectancy (25 and 85) employed to calculate the general HDI:

$$L^Q = \frac{e^Q - 25}{85 - 25} \quad \forall Q = 1, 2, \ldots, 5.$$

The aggregate life expectancy index, $L$, can be calculated using the overall life expectancy, $e$, instead of the quintile-specific life expectancy, $e^Q$.

### Inequality in School Enrolment and Educational Achievements

The quintile-specific education index is calculated, using the information on literacy and school enrolment provided by the HIS. To compute the adult literacy rate by income quintile, $A^Q$, the information on literacy status of all adults above the age of 15 is used. Then using again the corresponding usual minimum and maximum values employed in the HDI (0 and 1), the quintile-specific adult literacy index can be calculated as follows:

$$A^Q = \frac{a^Q - 0}{1 - 0} \quad \forall Q = 1, 2, \ldots, 5,$$

where $a^Q$ is the quintile-specific adult literacy rate. Again, the aggregate adult literacy index A can be calculated using $a$ instead of $A^Q$. To calculate the quintile-specific gross enrolment index, first the combined gross enrolment rate for each quintile, $g^Q$, is calculated whereby each individual attending school or university whether general or vocational is considered as enrolled. This rate is defined over all individuals of the age group 5–23 years old. Then the quintile-specific gross enrolment index, $G^Q$, is calculated using again the usual minimum and maximum values used for the calculation of the HDI (0 and 1):

$$G^Q = \frac{g^Q - 0}{1 - 0} \quad \forall Q = 1, 2, \ldots, 5.$$

The aggregate gross enrolment index $G$ can be calculated by using $g$ instead of $g^Q$. The quintile-specific education index $E^Q$ is then calculated using the same weighted average as the HDI: $E^Q = (2/3) \times A^Q + (1/3) \times G^Q \quad \forall Q = 1, 2, \ldots, 5.$.

The aggregate education index $E$ can be calculated by using $A$ and $G$ instead of $A^Q$ and $G^Q$.

### Inequality in Income

To calculate the GDP index by income quintile, the income variable from the HIS (adjusted for regional price differences in each country) is used. One main difference with the two other dimension indices is that mean income calculated from the HIS can be very different from GDP per capita derived from national accounts data, which is used for the GDP index in the general HDI. This has two reasons: first, because of conceptual differences between national accounts data and household income surveys and, second, because of measurement error on both levels. Hence, the GHK proceed as follows. First, to eliminate differences in prices between countries, household income per capita $y_h$ is expressed in USD PPP. Second, $y_h^{PPP}$ is rescaled using the ratio between the mean of $y_h^{PPP}$, i.e., $\bar{y}^{PPP}$, and GDP per capita expressed in PPP (taken from the general HDI). Once these adjustments are made, it is straightforward to calculate the quintile-specific GDP index, again using the usual minimum and maximum values of the HDI (100 and 40,000):

$$Y^Q = \frac{\log \overline{ry}^{Q,PPP} - \log(100)}{\log(40,000) - \log(100)}. \ \forall Q = 1, 2, \ldots, 5.$$

where $\overline{ry}^{Q,PPP}$ is the quintile-specific arithmetic mean of rescaled household income per capita. As pointed out by the authors, it must be noted that in richer countries the GDP per capita measure for the richest quintile could easily exceed 40,000 USD PPP and, hence, the index could take a value greater than 1, and this could, in extreme cases, push the overall HDI for the richest quintile also above 1. To avoid this to happen, the authors set the maximum of the income index to 1.

## Aggregation

Once the quintile-specific dimension indices have been calculated, determining the QHDI is straightforward. It is the simple average of the three dimension indices:

$$\mathrm{HDI}^{\mathrm{Q}} = (1/3) \times \mathrm{L}^{\mathrm{Q}} + (1/3) \times \mathrm{E}^{\mathrm{Q}} + (1/3) \times \mathrm{Y}^{\mathrm{Q}} \quad \forall\, \mathrm{Q} = 1, 2, \ldots, 5.$$

The aggregate HDI is as usual given by <//p>

$$\mathrm{HDI} = (1/3) \times \mathrm{L} + (1/3) \times \mathrm{E} + (1/3) \times \mathrm{Y}$$

For rich countries, GHM had to adapt the method as data sources differ from those in low- and middle-income countries. Income and education data is drawn from the ▶ Luxembourg Income Study (LIS). Information on inequality in mortality is taken from the literature. Details can be found in Grimm et al. (2010).

## Discussion

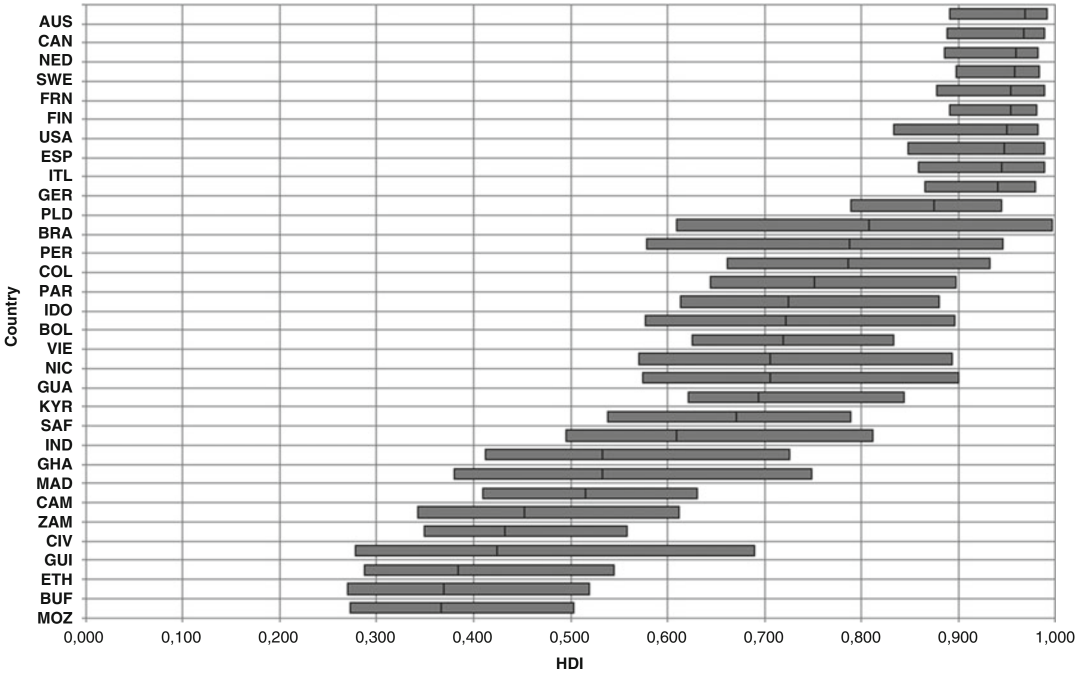
Table 1 shows the HDI by income quintile, the HDI, and the ratio of the HDI for the richest quintile to the poorest quintile and the HDI ranking for the richest and poorest quintile in the general HDI ranking of all countries (using the latest available HDI ranking). The results reveal very stark differences in human development between the richest and the poorest quintiles. In contrast to comparisons in income inequality (where Latin America is the most unequal region), African countries show more inequality in the HDI by income quintiles than Latin American countries. In Latin America, the ratio of the HDI between the richest and the poorest quintile oscillates around 1.4–1.6, while it ranges from 1.7 to 2.5 in most sub-Saharan African countries. The reasons for this are twofold. First, due to the logarithmic transformation of income in the HDI, income inequality is particularly attenuated in the richer countries of Latin America compared to poorer African countries. The assumption behind the logarithmic transformation in UNDP's HDI is that the well-being effects of higher incomes among the rich are declining with higher incomes. Thus, what is being measured here is not the differential in incomes but, in line with the general treatment of the income component in the HDI, the differential in important aspects of quality of life such as nutrition, housing, clothing, and other aspects that are closely correlated with incomes. Hence, richer Latin American countries which have typically a high income inequality appear less unequal as they actually are. Moreover, African countries still have a relatively high degree of inequality in literacy and educational attainment. This is not anymore the case in most Latin American countries. One should note, however, that education is only using literacy and enrolment rates and says little about educational quality which is likely to differ much more strongly between the rich and the poor. Inequality in life

**Human Development Inequality, Table 1** Quintile-specific HDI by country

| Country | Q = 1 | Q = 2 | Q = 3 | Q = 4 | Q = 5 | All | Ratio Q5/Q1 | Ranking All | Ranking Q = 1 | Ranking Q = 5 |
|---|---|---|---|---|---|---|---|---|---|---|
| *Developing countries* | | | | | | | | | | |
| Mozambique (2002/2003) | 0.272 | 0.333 | 0.357 | 0.400 | 0.503 | 0.366 | 1.846 | 175 | 179 | 153 |
| Burkina Faso (2003/2003) | 0.269 | 0.320 | 0.361 | 0.394 | 0.520 | 0.369 | 1.929 | 174 | 179 | 150 |
| Ethiopia (2000/2000) | 0.288 | 0.323 | 0.376 | 0.416 | 0.546 | 0.384 | 1.895 | 171 | 179 | 142 |
| Guinea (1995/1999) | 0.278 | 0.394 | 0.466 | 0.577 | 0.690 | 0.424 | 2.481 | 167 | 179 | 124 |
| Cote d'Ivoire (1998/1999) | 0.349 | 0.414 | 0.430 | 0.525 | 0.558 | 0.432 | 1.601 | 165 | 179 | 140 |
| Zambia (2002/2002) | 0.343 | 0.414 | 0.458 | 0.504 | 0.612 | 0.452 | 1.786 | 164 | 179 | 132 |
| Cameroon (2001/2004) | 0.410 | 0.473 | 0.518 | 0.554 | 0.630 | 0.515 | 1.539 | 150 | 168 | 129 |
| Ghana (1998/1998) | 0.412 | 0.506 | 0.559 | 0.606 | 0.727 | 0.533 | 1.764 | 144 | 168 | 109 |
| Madagascar (2001/1997) | 0.379 | 0.506 | 0.544 | 0.614 | 0.749 | 0.533 | 1.975 | 145 | 173 | 101 |
| India (1999/1997) | 0.495 | 0.573 | 0.642 | 0.703 | 0.812 | 0.609 | 1.642 | 132 | 156 | 68 |
| South Africa (2000/1998) | 0.539 | 0.622 | 0.678 | 0.721 | 0.789 | 0.671 | 1.465 | 125 | 143 | 79 |
| Kyrgyz Republic (1997/1998) | 0.622 | 0.681 | 0.716 | 0.728 | 0.844 | 0.694 | 1.358 | 122 | 130 | 51 |
| Guatemala (1995/2000) | 0.575 | 0.666 | 0.747 | 0.831 | 0.901 | 0.706 | 1.566 | 119 | 136 | 32 |
| Nicaragua (2001/2001) | 0.570 | 0.665 | 0.709 | 0.760 | 0.893 | 0.706 | 1.567 | 118 | 138 | 37 |
| Vietnam (2004/2002) | 0.626 | 0.688 | 0.741 | 0.764 | 0.834 | 0.719 | 1.332 | 113 | 130 | 55 |
| Bolivia (2002/2003) | 0.577 | 0.676 | 0.732 | 0.788 | 0.897 | 0.722 | 1.555 | 111 | 136 | 34 |
| Indonesia (2000/2003) | 0.613 | 0.687 | 0.726 | 0.783 | 0.880 | 0.725 | 1.435 | 109 | 131 | 38 |
| Paraguay (1990/1998) | 0.644 | 0.713 | 0.756 | 0.846 | 0.898 | 0.752 | 1.395 | 99 | 128 | 34 |
| Colombia (2003/2005) | 0.662 | 0.743 | 0.785 | 0.839 | 0.932 | 0.787 | 1.408 | 81 | 126 | 24 |
| Peru (2000/1994) | 0.578 | 0.717 | 0.85 | 0.898 | 0.945 | 0.788 | 1.636 | 80 | 136 | 19 |
| Brazil (1996/1997) | 0.610 | 0.768 | 0.874 | 0.941 | 0.997 | 0.807 | 1.635 | 70 | 132 | 1 |
| *Industrialized countries* | | | | | | | | | | |
| Poland (1999) | 0.790 | 0.834 | 0.861 | 0.894 | 0.945 | 0.875 | 1.197 | 39 | 79 | 19 |
| Germany (2000) | 0.866 | 0.902 | 0.936 | 0.962 | 0.979 | 0.941 | 1.131 | 23 | 44 | 1 |
| Italy (2000) | 0.858 | 0.895 | 0.927 | 0.961 | 0.989 | 0.945 | 1.152 | 19 | 49 | 1 |
| Spain (2000) | 0.848 | 0.888 | 0.926 | 0.959 | 0.989 | 0.948 | 1.166 | 17 | 50 | 1 |
| USA (2000) | 0.834 | 0.900 | 0.940 | 0.974 | 0.982 | 0.951 | 1.178 | 15 | 55 | 1 |
| Finland (2000) | 0.891 | 0.917 | 0.942 | 0.970 | 0.981 | 0.954 | 1.101 | 12 | 37 | 1 |
| France (2000) | 0.878 | 0.915 | 0.940 | 0.968 | 0.989 | 0.955 | 1.126 | 11 | 38 | 1 |
| Netherlands (1999) | 0.886 | 0.923 | 0.947 | 0.974 | 0.983 | 0.959 | 1.109 | 6 | 37 | 1 |
| Sweden (2000) | 0.898 | 0.927 | 0.947 | 0.974 | 0.984 | 0.959 | 1.096 | 7 | 34 | 1 |
| Canada (2000) | 0.888 | 0.926 | 0.954 | 0.982 | 0.989 | 0.967 | 1.114 | 4 | 37 | 1 |
| Australia (2001) | 0.891 | 0.932 | 0.960 | 0.985 | 0.992 | 0.969 | 1.113 | 2 | 37 | 1 |

*Source:* Grimm et al. (2010)
*Note:* For developing countries, the years in parentheses refer to the respective survey years. The first year refers to the HIS data set, the second to the DHS data set. All indices are rescaled to UNDP's reported HDI value of the year 2008

expectancy is not significantly different in Latin America and Africa. In both regions, inequality is with a few exceptions pronounced, but with an important variance across countries. Some of this may be related to data quality issues and the assumptions that were made in order to derive at these estimates. It appears however that in the developing countries inequality in life expectancy is smaller than other forms of inequality. However, two countries stand out: South Africa and Zambia. Both countries are strongly affected by the AIDS epidemic; hence, the level of life expectancy is particularly low and the inequality particularly high. Moreover, regarding the inequality in life expectancy, three additional cautionary notes are important, however. To some extent, smaller inequality is to be expected given that life expectancy is effectively



**Human Development Inequality, Fig. 1** Inequality in human development (*Source:* Grimm et al. (2010))

bounded above, i.e., there are limits to life expectancy that even high-income populations run up against. Second, the differences in actual life expectancy (rather than the life expectancy index) are still substantial with gaps between the poorest and richest quintile amounting to more than 10 years in several countries. Third, even seemingly smaller differentials in life expectancy may be seen as just as important, or even more important, than larger differentials in the other components. After all, the chance to live and be free from the fear of premature mortality is a fundamental precondition for all other aspects of life (Sen, 1998).

Most of the Asian countries included – Indonesia, Vietnam, and Kyrgyz Republic – show comparatively lower inequality. The exception is India, where the ratio of the HDI between the richest and the poorest quintile is also about 1.6. But Vietnam, for instance, shows more or less the same level of human development than Bolivia, but much lower inequality in human development. Moreover, it can be seen that inequality in human development in high-income countries is significantly lower than in middle- and low-income countries. For most countries included, the ratio of the HDI between the richest and the poorest quintile is "only" around 1.1. Exceptions are Poland, Spain, and the USA where this ratio comes close to the value of 1.2. In these countries, the relative high inequality stems mainly from income inequality and in thecase of Poland also from education inequality. More generally, one may even argue that the HDI is not well adapted to capture differences in human development across and within countries; differences lay not so much in school enrolment or life expectancy per se but rather in the quality of education received and the number of years lived in good health.

The rank positions of the different quintiles allow further interesting interpretations. Those can be seen in Table 1 again and are also visible in Fig. 1 which shows for each country the overall HDI and the index values for the poorest and richest quintile. For example, the richest quintile in Bolivia is at rank 34, i.e., among the countries with high human development, actually at the same level as Poland, whereas the poorest quintile is at rank 136. The average HDI in Bolivia in the 2008 human development report stood at rank 108. In some sub-Saharan African countries such as Cameroon, Guinea, and Madagascar, the richest quintile achieves a level similar to those countries with medium human development, i.e., far above the threshold of 0.5. In contrast, the poorest quintiles of these countries all rank among the 15 countries with the lowest HDI. Put differently, the differences within countries are as high as the differences between high and medium as well as medium and low human development countries. Also among rich countries, the differences are sizable. While the richest quintile in all included industrialized countries (except Poland) would top the list of human development achievements, the poorest quintiles would only be at rank 34 (Sweden) or lower. In Spain and the USA, the poorest quintile would even only occupy position 50 and 55, respectively, considerably worse off than the richest quintile in Guatemala, Colombia, Bolivia, or Indonesia.

The presented approach and the results had been discussed in UNDP's Human Development Report 2006 and in a special issue entitled Human Development Indices: A statistical update 2008 also published by UNDP (UNDP, 2006, 2009). As reported above, since then further efforts have been made to measure human development inequality. New variants of the HDI measure, for instance, human development by migrant status (Klasen & Harttgen, 2012).

## Cross-References

- ▶ Inequality in Quality of Life
- ▶ Inequality-Adjusted Happiness

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# Human Development Report (HDR)

▶ Education Index

# Human Development, Arctic

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## Synonyms

Artic qol; Well-being and Arctic human development

## Definition

Addressing ▶ Arctic ▶ human development requires defining both "Arctic" and "human development." The Arctic has not generally been treated by scientists (social, natural, or physical) as a distinct region worthy of study on its own but rather has been studied as segments or ecosystems which are part of Nation States or regional ecosystems. Political and ecological concepts of an Arctic region comprising the Arctic sea and the circumpolar Arctic and cutting across the boundaries of the eight Arctic nations (Canada, ▶ Denmark, ▶ Finland, Iceland, ▶ Norway, Sweden, Russia and the USA) only received currency with the development of the Arctic Council (1996) and the Arctic Monitoring and Assessment Program (AMAP 1997). The Arctic region is often roughly defined as those areas north of the tree line, north of the Arctic circle (66°, 33 s of latitude), or north of 60° of latitude. Human development has been defined broadly by the UNDP as follows: "Human development aims to enlarge people's freedoms to do and be what they value and have reason to value. In practice, human development also empowers people to engage actively in development on our shared planet. It is people-centered. At all levels of development, human development focuses on essential freedoms: enabling people to lead long and healthy lives, to acquire knowledge, to be able to enjoy a decent standard of living and to shape their own lives (Alkire, 2010)." This definition reflects the Sen "capability" approach (Sen, 1989) and also incorporates various dimensions of development that have been consistent throughout most definitions and operationalizations of the concept of human development, including health, education, material well-being, improved choices, and participation in development.

## Description

Human development in Arctic regions is arguably both similar to and different from human development in other areas of the globe. Arctic human development failed to attract scholarly attention and remained relatively under-researched (with notable exceptions, e.g.. Kruse et al., 2007) until the Arctic Council commissioned the ▶ Arctic Human Development Report (AHDR, 2004). One challenge in addressing Arctic human development was treating the Arctic as a discrete entity. The Arctic Human Development Report provided a survey or snapshot of human development in the Arctic and identified six dimensions of human development that could be employed to describe and potentially measure human development in the Arctic. These dimensions include factors widely accepted as critical indicators of quality of life on a global scale as identified in the UN Development Index, education, health, and material well-being. The AHDR, however, focused on another three dimensions that were identified as being unique to Arctic residents and communities and perhaps even more critical to their well-being: fate control, cultural integrity, and contact with nature. The Arctic Social Indicators project followed up on the AHDR to develop a set of indicators for each of those six domains or dimensions of human development (Nymand Larsen et al., 2010). The Arctic Social Indicators project recommended a monitoring program to track Arctic human development across the region and over time. Based on these two research reports, Arctic human development can be seen as depending to a large extent on health, education, material well-being, control one has over one's destiny, the maintenance of cultural integrity, and the degree to which Arctic residents can continue to establish and maintain a close and meaningful relationship with the natural world.

## Cross-References

- ▶ Arctic Human Development Report (AHDR)
- ▶ Arctic Social Indicators (ASI)
- ▶ Human Development Index

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# Human Dignity

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## Synonyms

Patient autonomy; Respect for persons

## Definition

Dignity is a concept relevant to assessing a person's subjective and objective well-being.

## Description

The concept of dignity is often invoked in discussions of health care, human rights, and human well-being. It is generally accepted that people ought to be treated with dignity and that failing to do so is morally wrong. But individuals differ in how they define dignity, and there is disagreement over what dignity means in different contexts.

This entry focuses on the role dignity should play in patient care. The emergence of modern medical ethics is widely associated with the "death with dignity" movement that began in the 1960s as an effort to give patients and their families more control over decisions at the end of life. Yet there is a lively debate in the medical ethics literature about the importance of dignity as a moral concept. Scholars are divided on whether dignity analysis can enhance our understanding of ethical conduct in medicine.

Much of the argument centers on the meaning of dignity in health care. Critics contend that "appeals to dignity are either vague restatements of other, more precise notions, or mere slogans that add nothing to an understanding of a topic" (Macklin, 2003). According to the critics, dignity concerns should be discarded and replaced by more meaningful ethical ideals, such as promoting patient autonomy and welfare, respect for persons, and confidentiality in medicine. From their perspective, clinicians and scholars should concentrate on these concepts and objectives rather than indulge in hazy, subjective, and relativistic speculations about the importance of preserving human dignity in the medical setting.

Others dispute this position, however, arguing that dignity can illuminate important considerations otherwise overlooked in ethical analysis. For example, dignity is a major concern in the literature on palliative and end-of-life care (Chochinov et al., 2005; Dignity at the End of Life, 2004). Indeed, some criticize the medical ethics field for failing to attend to patients' needs for dignity.

Moreover, the view "from the trenches" is that dignity is fundamental to good patient care and that modern medicine too often fails to live up to this standard. Patients endure many personal offenses in ordinary clinical settings, such as "excessive waiting time, failure to address the patient by his or her preferred name, violations of privacy of conversations and records, inappropriate body exposure of the patient, failure to listen to the patient and adequately explain the nature of illness or procedures, inadequate communications among the treatment team, and making disparaging or condescending comments about the patient's medical conditions or habits" (Lazare, 2006). According to Lazare, offenses like these are violations of patient's dignity. Clinicians and health-care organizations should strive to prevent them and should apologize to patients when they do occur.

Like other moral concepts, dignity has both strengths and weaknesses. It is fair and necessary to point out the wide variation in how dignity is employed in ethical discourse. For example, people cite dignity in arguments both for and against the morality of abortion, euthanasia, and physician-assisted suicide. Not enough has been done to develop a precise, consensus-based definition of dignity in health care nor have there been sufficient efforts to determine what patients and the general population see as dignified medical care (Dresser, 2008). Future research and scholarship should focus on these areas, with the aim of developing a richer understanding of what dignity means, and ought to mean, in the context of illness and patient care.

## Cross-References

- ▶ End-of-Life Care
- ▶ Ethics
- ▶ Human Rights
- ▶ Palliative Care
- ▶ Vitality, Community, and Human Dignity in Africa
- ▶ Well-being, Philosophical Theories of

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# Human Ecology

▶ Ecosystem Approach to Human Health

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# Human Excellence

▶ Ubuntu: The Good Life

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# Human Existence and Quality of Life

▶ Systemic Quality of Life Model (SQOL)

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# Human Functioning Components of Older Persons

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## Definition

The ultimate goal of ▶ health intervention is to increase ▶ quality of life (QOL). Quality of life of older adults is a major concern. However, few studies have considered the conceptualization of QOL, limiting research and interventions in this field.

## Description

In this entry, we (1) explore perceptions and lived experience of community-dwelling older adults about their QOL in regard to human functioning, including (1) verbal data collection, (2) reading of data, (3) division of data into units of sense, (4) organization and reformulation of original data in the disciplinary language, and (5) synthesis of results. Themes emerged from the content of the interviews and were only afterwards organized and renamed according to the human functioning conceptual model components, i.e., personal factors, ► social participation, and environment, according to the conceptualization of QOL from Dijkers (2005). A qualitative study was undertaken with community-dwelling older adults having various levels of ability and QOL and preserved cognitive functions. Participants were recruited from two sites: a local community service center and a geriatric day hospital or center. Data collection procedures involved two individual in-depth interviews with each participant. The interviews were conducted in participants' homes by an occupational therapist using a semi-structured interview guide which was developed based on one human functioning model, i.e., the Disability Creation Process (Fougeyrollas et al., 1998). Data analysis was guided by the phenomenological method (Giorgi, 1997).

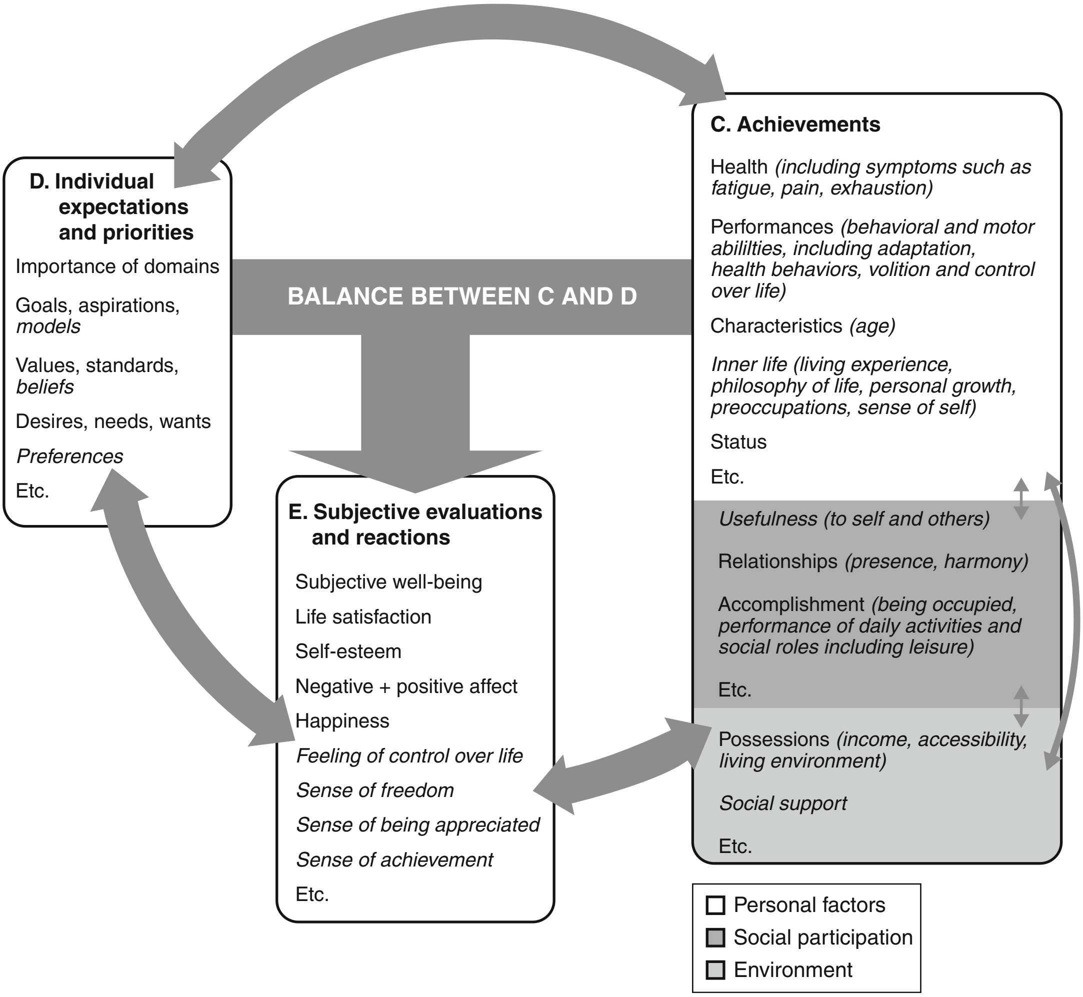
### Results

The eighteen participants were aged from 63 to 92 years old. The majority (n = 12) were women, had less than 12 years of schooling, and perceived their ► health to be good or excellent. Most participants could easily define and appreciate their QOL which was seen as multidimensional: "*Being happy with oneself, happy in one's environment, being happy with one's life.*" Their perceptions differed only slightly according to their ability and QOL levels. Disability does not necessarily lead to decreased QOL, but ► adaptation to disabilities is crucial: "*I adapted myself… and I feel more serene, at peace with myself.*" Feeling in control of one's life is also important: "*I'm mastering the quality that I can bring to my life. We can control the choices we make to improve our QOL.*" Older adults' perceptions highlighted the importance of cognitive and emotional reactions resulting

**Human Functioning Components of Older Persons, Table 1** Synthesis of the thematic classification: factors influencing community-dwelling older adults' QOL

| | |
|---|---|
| 1. Personal factors | 1.1 Age (maturity and experience) |
| | 1.2 Health |
| | 1.3 Inner life (living experience, philosophy of life (+), personal growth (+), **preoccupation**, belief (+), respect for personal values) |
| | 1.4 Abilities |
| | 1.4.1 Behavioral abilities (control over life) |
| | 1.4.1.1 Volition (+) |
| | 1.4.1.2 Affectivity (satisfaction, well-being, sense of achievement, sense of freedom, self-esteem, feeling of being appreciated) |
| | 1.4.1.3 Behavior (adaptation, being positive) |
| | 1.4.2 Motor activity abilities (−) |
| 2. Social participation | 2.1 Being occupied (activities that change one's mind-set) |
| | 2.2 Performance of daily activities and social roles |
| | 2.3 Activities related to health behaviors (+) |
| | 2.4 Significant daily activities (nutrition, fitness (intellectual stimulation) (+), communication (+), mobility, personal care (hygiene) (−), housing (+)) |
| | 2.5 Significant social roles (responsibility (+), interpersonal relationships (presence, harmony, helping others), community (religious activities, volunteer) (+), leisure, education) |
| 3. Environmental factors | 3.1 Adaptation to the physical environment |
| | 3.1.1 Accessibility |
| | 3.2 Adaptation to the social environment |
| | 3.2.1 Income |
| | 3.2.2 Surroundings |
| | 3.2.3 Social attitude |
| | 3.2.4 Formal or informal support |

Note: Some themes specifically foster good (+) or lead to poor (−) QOL, while those indicated in bold were identified by the majority (n > 9) of the participants



**Human Functioning Components of Older Persons, Fig. 1** Dijkers' conceptualization of subjective QOL including *additions from the present study*. Note: themes in italics and lighter font were added by the present study

principally from the congruence between their expectations and achievements: "*To do what I want to do as much as possible. That's what I do. Thus I have a good QOL.*" Being active is important for good QOL: "*I'm mentally occupied. I'm 72 years old and try to keep up with me! I have things to think about, things to fill my days.*" Contribution of personal factors is preponderant: "*We can all be very happy in our life. It is mainly what is inside, our attitude. It depends on you if you have good QOL.*" But factors from social participation and environment were also present (Table 1). Relationships and helping others are definitely important for good QOL: "*I meet the guys, we have fun... I made some good friends. While I was helping them, I was helping myself. Friendship accounts for three-quarters of my life.*" Physical environment can compensate for disabilities: "*Without my walker, I will decline, it's my legs... my QOL is good if you give me the right tools.*" This exploration of older adults' perceptions is a further step toward empirically confirming and improving Dijkers' conceptualization of QOL (Fig. 1) according to

(1) QOL label, (2) content of the boxes, (3) identification of the components, and (4) links between the boxes.

### Quality of Life Suggested Definition

Inspired both from the WHOQOL (1995) and our work, one definition of subjective QOL may be as follows: An individual's cognitive and emotional reactions toward his/her achievements in the context of the culture and the value systems in which they live and in relation to their goals, expectations, standards, and concerns.

### Clinical Implications

- Consider older adults' perception about QOL and personal factors, social participation, and environmental factors and fully consider his/her expectations.
- Help them to narrow the gap between expectations and achievements and recover control over their lives, either by reaching their goals or reconsidering them in a more realistic way.
- Support older adults' integration into the community or allow them to discover significant activities, which are salient to their identity and can make a difference from their perspective.
- While some people may have substantial difficulties in *doing*, find alternative activities and also encourage *being*, simply experiencing life and the surrounding environment to help them enhance the quality of their lives.

## Conclusions

This entry focused on the perceptions of older adults about personal factors, social participation, and environmental factors in regard to their QOL. These results have theoretical as well as methodological implications for further QOL study. Contribution to QOL conceptualization, including how human functioning components, are important for QOL. Results represent some interesting leads to develop interventions aimed at improving or maintaining QOL of older adults.

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# Human Immunodeficiency Virus

▶ HIV in Malaysia

## Human Infertility

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### Synonyms

Childlessness; Sterility

### Definition

In demography, fertility indicates the product or output of reproduction.

### Description

In demography, fertility indicates the product or output of reproduction. It is distinguished from the physiological ability to have children (i.e., manifests roughly in the period between menarche and menopause in women) and is defined fecundity. Demographers define a third, further aspect of reproduction (fecundability) which is the probability of becoming pregnant, or the likelihood of exposure to the possibility of becoming pregnant, that depends on the pattern of sexual and pregnancy preventive behaviors.

Similarly, demographers use the term *infertility* to refer to the absence of live-born children, or the presence of few children, rather than the term sterility that refers to the possible physiological status underlying childlessness.

Conception and pregnancy followed by fetal loss – whether due to spontaneous or induced abortion or at term (stillbirths) – is not considered to contribute to fertility by demographers, as these occurrences are not easy to measure. Accordingly, fertility refers to live births only, and infertility refers only to shortfalls in live-born children, whether or not pregnancy(ies) occurred.

The inability to bear children is a tragedy for many couples, bringing a sense of loss, failure, and exclusion. Infertility also has important demographic and health implications. In several developing countries, where the status of woman depends on the number and on the sex of live births, infertility represents a reason of low woman condition, both in the family and in the community.

Generally, five principal measures were used in the analysis on infertility: childlessness, primary and secondary infertility, self-reported infecundity, and indications of secondary infecundity. In addition, levels of sexual experience, pregnancy, and live births were measured.

Infertility is a problem that affects all the countries, both developed and developing ones (global incidence is around 10 %) but in sub-Saharan Africa is higher, around 15 %. Data are derived from different types of studies in infertility such as clinical studies, epidemiological studies, infertility surveys, and demographic surveys, such as Demographic and Health Surveys. According to a recent comparative DHS study, countries with more than 5 % of sexually experienced women aged 45–49 without a birth include the Central African Republic, Cameroon, Mozambique, Niger, Haiti, Colombia, and Brazil. Some women do not desire to have children. For women with no living children and whose idea is to have no children, the countries with the highest percentages are Brazil, Ethiopia, Bolivia, Colombia, Turkey, and Nicaragua (4–6 %).

Looking at more recent DHS data in developing countries regarding currently married women 45–49 years old without children ever born, we note percentages around 2–4 % (Rutstein and Shah, 2004). In sub-Saharan Africa, the percentages go from 4.7 of Madagascar (2008–2009) and 3.0 of Sierra Leone (2008) to 2.1 of Nigeria (2008) and 1.4 of Liberia (2007). In Middle East, Jordan presents higher values (4.3 in 2007), while in Latin American percentages are around 3 %.

## Cross-References

▶ Fertility Rate

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# Human Needs

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## Synonyms

Basic needs; Self-needs satisfaction

## Definition

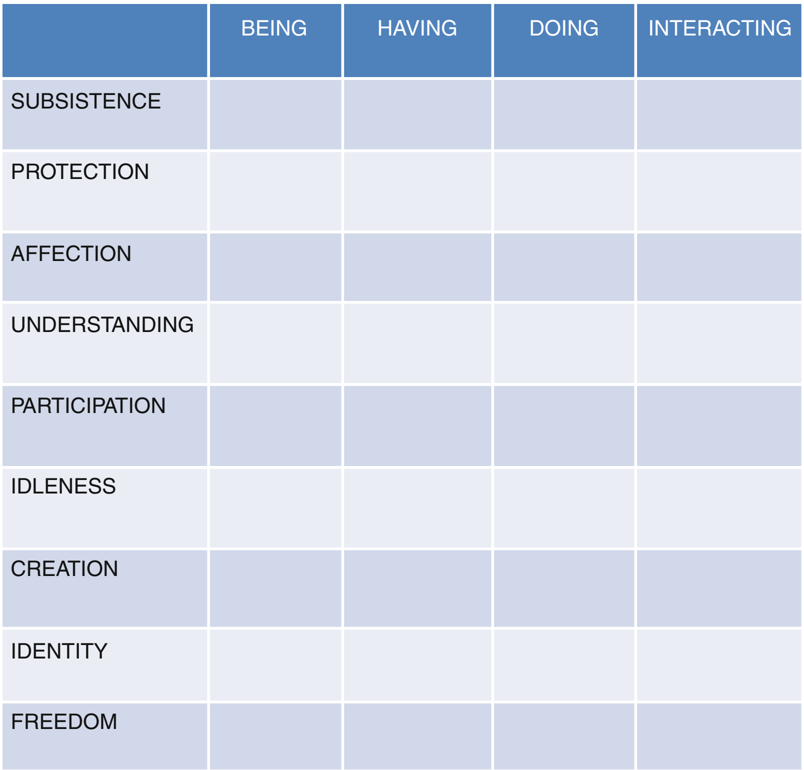
Human needs are commonly used to refer to the drivers of peoples' actions, the motives behind human behavior. Other uses of the concept include needs as instruments to achieve a certain goal and needs as societal requirements to flourish or experience a good life (Gasper, 2004). Needs as motives imply that all human actions can be understood as originating in the quest for satisfying or actualizing needs. Needs as societal requirements concern what is necessary for people to avoid serious harm and participate in their society, whether or not they are mobilized by them. Needs as requirements to achieve a certain outcome like fulfillment, happiness, or satisfaction fall in between the two last explanations. They take the elements that contribute to achieving the goal of a good life (such as jobs, income, health care, status) as the requirements or needs for the realization of the goal. The distinction between these three sets of meanings is not always clear-cut, and many approaches to human needs fall in between two of the three classifications.

## Description

### Needs as Motives

Human needs as drivers for action have been widely studied in psychology. Historically, motivation theories based on needs have evolved from lower theories focusing on the biological origins of human action to higher theories that account for the complex world of social-cognitive motivations (Pincus, 2004). The latter is represented by the work of Maslow (1954) who developed a theory of needs based on a natural hierarchy where *physiological needs* (hunger, thirst, safety) were at the base of the pyramid and *self-actualization needs* (the need to live up to one's unique potential) at the top. Drawing on clinical experience, he claimed that the emergence of higher needs was subordinated to a certain level of gratification of physiological needs and *safety needs* (security, stability dependency, protection, freedom from fear, etc.). His theory implied that all human action is driven by one or more needs even if people are not always aware of it. Maslow's approach was criticized for understating the importance of the social and natural environment, being ethnocentric and hierarchical. However, it has been used as a basis for the development of other theories that incorporate the socio-environmental dimension of needs and their cultural and historical dynamics (Hamilton, 2003).

Motivational theories of needs assume that need satisfaction enhances quality of life; it has a positive impact at the objective and subjective level. This view accords with neoclassical economics approach to market behavior, which is seen as being driven by the satisfaction of needs or wants (both used interchangeably) and results in enhanced well-being or utility. However, many human actions do not have a positive contribution



| | BEING | HAVING | DOING | INTERACTING |
|---|---|---|---|---|
| SUBSISTENCE | | | | |
| PROTECTION | | | | |
| AFFECTION | | | | |
| UNDERSTANDING | | | | |
| PARTICIPATION | | | | |
| IDLENESS | | | | |
| CREATION | | | | |
| IDENTITY | | | | |
| FREEDOM | | | | |

**Human Needs, Fig. 1** Matrix of needs and satisfiers (Max-Neef, 1991)

to a person's quality of life. This is not only the case of addictive behavior or actions driven by altruism and commitment, but of behaviors like commuting to work or watching TV. Manfred Max-Neef (1991) in his book Human Scale Development developed a conceptual framework to explain this disconnect. He argued that even if people are motivated by the satisfaction of needs, their actions are embedded in social practices, political models, and cultural environments that might impede their fulfillment or actualization. Inspired by Maslow, Max-Neef defined a taxonomy of needs organized around axiological (subsistence, protection, affection, understanding, participation, idleness, creation, identity, and freedom) and existential categories (being, having, doing, and interacting). The two sets of categories cross to form a matrix with empty cells that represent the culturally relative *satisfiers* that have to be identified in a participatory manner at the local level (see Fig. 1).

Max-Neef maintains that there are certain types of satisfiers (inhibiting satisfiers, pseudo-satisfiers, violators, or destroyers) that instead of actualizing needs work against them and deplete people's quality of life. He uses the example of commercial television to illustrate the negative effect of an inhibiting satisfier as it might actualize the need for leisure but it impairs the satisfaction of the need for understanding, creation, and identity. Empirical research on the effect of satisfiers on people's quality of life is still in its infancy, but there is a growing field of work that points at the detrimental effects for well-being of drawing on specific satisfiers (Guillen-Royo, 2010). For example, in order to actualize the need for idleness, one can engage in outdoor activities or spend some time watching TV with radically different effects on well-being (Sustainable Development Commission, 2008; Frey, 2008). One can satisfy subsistence needs with a life of frugality or overconsuming, the former contributing to well-being and the latter depleting it (Brown & Kasser, 2005). Societies can give different sorts of participation rights to its citizens, with citizens enjoying more extensive rights being happier than their less empowered counterparts (Frey, 2008). These are only some examples of current satisfiers and their implications for well-being or quality of life. However, in the context of climate change, more research is required to extend this work and ascertain the satisfiers that allow an optimal actualization of needs while protecting the natural environment and thus enhancing short- and long-term quality of life.

## Needs as Requirements for a Good Life

Understanding needs as human or societal requirements for well-being relates to the *eudaimonic* tradition in psychology and social policy. It has its roots in the Aristotelian view that contentment is found in doing what is virtuous and that people must live in unity with their *daimon* or true self. In psychology, the *eudaimonic* approach has been popularized by Ryan and Deci's Self-determination Theory (SDT) (Ryan & Deci, 2000) and in social policy by Doyal and Gough's normative Theory of Human Need (Doyal & Gough, 1991). Ryan and Deci claim that there are three basic psychological needs that foster well-being: autonomy, competence, and relatedness. *Autonomy* implies that people value and feel interested in their own actions and that these are self-endorsed and not forced by external agents. *Competence* concerns being able to achieve results to function effectively in one's society. *Relatedness* is linked to feeling part of the society, accepted, and respected beyond the close family ties. The three basic psychological needs derive from ethological, behavioral, and developmental evidence and are believed to be universal to human beings in all societies. In spite of the fact that people are not always aware of the importance of needs, when they are fulfilled, people feel self-motivated and content.

Following also the *eudaimonic* tradition but within the disciplines of international development and social policy, basic needs discourses have been part of discussions of societal quality of life for decades. They were popularized in the 1970s by the International Labor Organization and the World Bank and have been recently brought back to the development discourse by the UN Millenium Development Goals and the influential works of Amartya Sen. Doyal and Gough's normative *Theory of Human Need* (THN) (Doyal & Gough, 1991) is one of its most prominent representatives. The THN establishes a hierarchy of needs ranked from universal goals through basic needs to intermediate needs. Universal goals are avoidance of serious harm, social participation, and critical participation. These are reached through the basic universal needs of physical health and autonomy.

Following Doyal and Gough, basic needs can be met in different ways and through satisfiers. However, for satisfiers to contribute to physical health and autonomy, they have to have one of the eleven *universal satisfier characteristics* or *intermediate needs* which are adequate nutritional food and water, adequate protective housing, nonhazardous work environment, nonhazardous physical environment, appropriate health care, security in childhood, significant primary relationships, physical security, economic security, safe birth control and childbearing, and appropriate basic and cross-cultural education. Contrasting with Max-Neef's approach to satisfiers, which includes categories of satisfiers that might harm needs actualization, Doyal and Gough define satisfiers through their effective contribution to basic needs fulfillment. When goods and services do not hold the universal satisfier characteristics, they are considered luxury goods linked to the satisfaction of wants. Their absence is not associated with serious impairment of functionings.

The distinction between needs and wants has been used in subjective well-being research to explain the Easterlin paradox; this is that economic growth does not result in higher SWB beyond a certain level of income (Easterlin, 1974). For example, Di Tella and MacCulloch (2010) in their study using average income or wealth as a threshold for need satisfaction found that when basic needs are satisfied, there is full adaptation to additional economic growth both at the intra- and cross-country levels. Veenhoven uses the distinction between needs and wants to explain this recurrent finding. As he posits "needs are requirement for functioning that are so vital that evolution has safeguarded their fulfillment by means of hedonic signals" (Veenhoven, 2007). Thus, people will automatically feel good after their basic needs are met. Since affluent societies usually provide needs gratification to their citizens, increases in income will be lowly correlated with happiness and will reflect the fact that people adapt to the more superfluous wants. Recent studies using more comprehensive indicators of needs than average income confirm the universal importance of basic needs satisfaction for people's subjective well-being within countries and across cultures (Diener, Diener, & Diener, 1995; Guillen-Royo, 2011).

## Cross-References

- ▶ Adaptation
- ▶ Basic Needs
- ▶ Easterlin Paradox
- ▶ Motivation
- ▶ Need Fulfillment
- ▶ Need Theory
- ▶ Self-Determination Theory
- ▶ Subjective Well-being

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# Human Resources

- ▶ Human Capital

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# Human Rights

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## Synonyms

Duties and obligations; Equality; Equality rights; Freedom from discrimination; Fundamental freedoms; Interdependent and indivisible rights; Rights and quality of life; Tolerance; Universal and inalienable rights

## Definition

Human rights are deemed universal and inalienable rights that are believed to be inherent for all human beings. These rights include such fundamentals as the right to life, ▶ liberty, and security of the person. Human rights are assertions about ▶ ethics and moral considerability. Human rights acquire the status of legal claims when they are entrenched in law through charters and constitutions.

## Description

Where one begins a discussion of human rights is challenging. Some might begin with the thoughts of ▶ Plato and ▶ Aristotle. Others would choose 1215 and cite the Magna Carta (Helmholtz, 1999, p. 299) where King John, after flagrant and callous indifference to "accepted standards of justice," was forced by noblemen and leaders to sign a document which "came in time to stand as a symbol of the rule of law against tyranny of the state."

In this discussion, we will begin with the twentieth century where the first international, collective and modern approach to human rights was declared and passed on December 10, 1948, by the United Nations as the UN Declaration of Human Rights. The deliberations and final document followed the Nuremberg Trials where individuals stood trial for crimes against humanity, including torturous and terminal human experimentation by the Nazis during World War II.

It is in some ways quite a natural choice to begin a discussion of human rights in the twentieth century because our modern understanding of human rights is intrinsically bound to our understanding of ▶ democracy as "a universal value," as Sen (1999, p. 4) would put it, is a twentieth-century phenomenon.

Human rights, as Sen (2004, p. 3) further notes, "can be seen as primarily ethical demands. They are not principally "legal," "proto-legal" or "ideal-legal" commands. Even though human rights can, and often do, inspire legislation, this is a further fact, rather than a constitutive characteristic of human rights."

The relationship between discussions about human rights and ▶ quality of life should be self-evident. "Objective" social indicators measure such variables as safety and ▶ crime, ▶ mortality rates, access to ▶ health care, access to ▶ education, equal rights for women and men, equal rights for persons of different races, political freedom, environmental safety, and work safety and ▶ wealth. Other things being equal, 'it would be fair to assume that the more democratic a country is and the more human rights are protected by laws and other constitutional protections, the more people would report satisfaction with the quality of their lives in various domains. This is more or less the case across a wide range of objective or agreed upon domains. However, as many social scientists have noted, e.g., Diener (1997, p. 197), even objective indicators can have significant data problems. For example, the reporting of stigmatizing diseases, like ▶ mental illness, or stigmatizing crimes, like rape, is frequently and seriously unreported. Further, how individuals subjectively feel about a number of seemingly objective indicators like the level of infant mortality in a country can paradoxically seem to vary from what many would consider to be objectively the facts. If you seriously undervalue female children, for example, disproportionately high female infant mortality rates will not be seen as as serious a matter as it would in democratic nation states.

The United Nations Declaration of Human Rights of 1948 took the identification and articulation of a series of universal rights for all human beings as the purpose and content of the document. Thus, Article 1 states, "All human beings are born free and equal in dignity and rights. . .." Article 2 further states that "Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status."

The declaration then proceeds to articulate a series of human rights which include a right not to be held in slavery, not to be tortured, and not to be treated cruelly to a right to live freely, a right to democracy, and a right to education.

The problem with such articulation of rights is that many nations do not agree with these rights and in many parts of the world, human rights are diminished based on the precise grounds that the declaration selects as prohibitive grounds for discrimination. Further, the United Nations does not have the ability to enforce the declaration on independent nation states. Only through the incorporation of rights in national charters and constitutions does the protection of human rights increase.

Since the 1948 declaration, the United Nations has crafted, adopted, and disseminated many further declarations on the rights of particular groups of human beings (e.g., the disabled, children, the girl child, women, indigenous peoples). In much of the world, however, many persons are denied equal rights because of sexism, racism, classism, abilism, and lack of democratic protections. Even within democracies, discrimination can be widespread and difficult to eliminate.

### Rights and Claims

One problem with rights is the relationship between rights and claims or obligations. If all individuals have a right to life, then there is a moral obligation on individuals and governments to protect those rights. Some rights impose what others believe to be unfair burdens. For example, some believe that everyone should be entitled to universal access to health care. Others believe that the taxation burden required to pay for such universal health care is unfair and too onerous to those who are taxed and that only those who can afford it should be able to access health care. The response of democratic nations to whether this is a right with a corollary claim on others is consequently differently understood in different nation states.

What is clear is that entrenching rights in the constitution or charter of a nation state is the means of stipulating and attempting to ensure that the right is protected independent of any belief that such rights are universal or inalienable.

### The Notion of "Counting" and Equality of Considerability

One of the most contested topics in any discussion of human rights is about who counts as equal or who must be considered when we are talking about rights. All advocates of universal human rights make the moral assertion that every human being should have the same fundamental rights as all other human beings. Moral assertions, however, are not self-certifying. Consequently, in many parts of the world, both research and political activism continue in an effort to rectify discriminatory practices against some parts of the human population by others.

Much of the research on social indicators, quality of life, ▶ happiness, and life satisfaction is predicated on beliefs about universality with respect to human rights. Studies about poverty levels, war zones, economic disparity, and social deprivation are topics of research precisely because there are so many human beings with fewer rights than others.

Unfortunately, given the significant disparity in the application of human rights in various parts of the world, there is still significant progress to be made here.

## Cross-References

- ▶ Critical Disability Theory
- ▶ Deprivation and Social Exclusion in Europe
- ▶ Equity
- ▶ Equity Index
- ▶ Equity Theory
- ▶ Gender and Education
- ▶ Gender and Health
- ▶ Gender and Poverty
- ▶ Measuring Democracy
- ▶ Poverty

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# Human Rights, Religion, and HIV/AIDS in Bangladesh, Indonesia, and Iran

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## Definition

The epidemic spread of human immunodeficiency virus (HIV) that causes acquired immune deficiency syndrome (AIDS) – generally known as HIV/AIDS – poses the gravest threat to global ► public health and is regarded as one of the most formidable challenges to ► human rights (International HIV Fund, 2011). In the Muslim world, like much of the rest of the world, the core question is as follows: Who is responsible for preventing this epidemic from spreading? Obviously, the recognition of health as a basic human right presupposes that governments bear a certain responsibility for the health of their constituents (Toebes, 2009). The focus on health gives the human rights struggle a new dimension while also underscoring the importance of socioeconomic development. The attempt to globalize public health by progressively enabling developing countries to achieve the right to health has sparked a plethora of arguments and questions, not the least of which is whether a human rights-based approach provides a creative framework to deal specifically with recognizing and evaluating change – or its absence – as it relates to the prevalence of the HIV/AIDS epidemic (Mann et al., 1999).

HIV/AIDS is inextricably intertwined with levels of socioeconomic development and the realization of ► social justice and ► human rights. The preventive remedies to effectively combat this epidemic – ► poverty and ► education – transcend religion entirely. Interventions that focus solely on altering individual behavior while ignoring structural influences are futile. It is crucial to use comparisons to single out similarities and differences in the cases of Bangladesh, Indonesia, and Iran. Each state represents a majority Muslim – either Shi'a or Sunni; population at 98 %, 86 %, and 89 %, respectively, has signed the Declaration of Commitment on HIV/AIDS and reports the progress of their HIV/AIDS treatment and prevention efforts to UNAIDS (2007), the UN organization tasked with monitoring and combating the spread of HIV/AIDS.

Yet at the same time, the basis for comparison is that each state interacts differently with the West, is emblematic of different governmental systems, and has varying rates of HIV/AIDS ▶ prevalence (Sharma, 2008). Several research questions remain: (1) Does a structural emphasis on development, poverty reduction, ▶ gender equality, and education enhancement provide the most effective way to cope with HIV/AIDS epidemic? (2) What role do culture, faith, and identity play in the fight against this epidemic? And (3) what preventive means are provided to harness the spread of this epidemic?

## Description

In 2001, the United Nations General Assembly passed the Declaration of Commitment on HIV/AIDS in order to reverse the growth of the HIV/AIDS epidemic by 2015 as outlined in the Millennium Development Goals. Signatories committed themselves to acknowledging the inherent human rights of persons living with HIV/AIDS including the rights to be free of discrimination and to have access to ▶ healthcare. At the time of this declaration, the governments of Iran, Indonesia, and Bangladesh viewed themselves as immune from the spreading HIV/AIDS epidemic because certain Islamic practices served as a bulwark against risk factors for contracting the virus. By 2007 it was clear that this position was unfounded; that year an additional 37,000 people in the Middle East and North Africa region contracted HIV, bringing the total number of HIV-positive persons in the region to over 380,000. During the same period, 17,000 people had contracted the virus in Oceania and 150,000 in Eastern Europe and Central Asia. Many predominately Muslim states have subsequently confronted the reality and impact of populations engaging in behaviors considered "deviant" within Islam that are associated with an increased risk of contracting HIV/AIDS. These populations include men who have sex with men (MSM), ▶ sex workers, and injecting drug users (IDUs) (Aceijas, Stimson, Hickman, & Rhodes, 2004; Sufian, 2004). Several factors influence how the government of each state has acquiesced to the revelation of these populations and acted to meet their rapidly changing needs.

### Iran: Triangulation Clinics

The Islamic Republic of Iran's response to the HIV/AIDS epidemic is surprising and mixed. The first case of HIV Iran was documented in 1981. Another 6 years passed before Iran identified its first case of AIDS (Khoshnood, 2003). It is estimated that approximately 92,000 people in Iran are living with HIV. Roughly 10 % of those needing antiretroviral treatment are currently receiving it. Expanding ARV coverage has not kept pace with new infections.

The accelerating pace of new HIV infections among the IDU demographic has prompted Iran to reevaluate its policies vis-à-vis drug use and treatment. Iran has more than two million registered drug addicts; 300,000 are believed to be drug injecting. Sixty percent of all HIV cases in Iran are contracted by users sharing needles. Yet opium production and drug treatment centers were banned after the 1979 Islamic Revolution. Drug use and drug addiction were treated as a crime and carried harsh penalties, including mandatory detention and execution in cases possession surpassed specified amounts. By the mid-1990s a major shift in Iran's drug policy occurred in the way the Iranian government responded to the drug addiction problem. The Iranian government acknowledged that it in fact had a serious problem – that is, an epidemic of drug use and drug addiction – and that previous policies and laws, such as incarcerating people, had failed.

In 2003 the Iranian government issued a *fatwa* that legalized needle exchanges. Whether policy shifts such as these that are meant to assist interventions into at-risk populations continue remains to be seen. There is always a danger in going back to the old policies of incarceration and criminal approaches to drug use and addiction (Khoshnood, 2003).

Social stigmas regarding STIs (sexually transmitted infections) remain one of the most prohibitive dimensions of HIV/AIDS treatment and prevention in Iran. Effective management of the HIV/AIDS epidemic is dependent upon accurate detection and surveillance of HIV/AIDS. Many Iranians are deterred from seeking HIV testing due to a lack of anonymous testing facilities in Iran. Social stigmas have promoted a cost-benefit mentality among many Iranian youth where the fear of social, familial, and institutional rejection for being HIV positive outweighs the potential health implications. Such attitudes are especially prevalent in rural areas where access to support, care, and treatment is limited.

In urban settings Iran has helped develop a breakthrough comprehensive treatment and prevention model known as "triangulation clinics" which were developed with grants and assistance from nongovernmental organizations (NGOs). These clinics provide anonymous testing, methadone, antiretroviral treatment, and other HIV/AIDS-related services free of charge. The number of these clinics is limited. State-funded facilities, like those found in rural areas, remain the focal point of Iran's HIV/AIDS prevention services (Aman & Maher, 2006).

Iran's state-dominated sexual discourse limits the efficacy of HIV/AIDS prevention efforts. The theocratic state employs many Islamic elements regarding appropriate sexual practices and discussion of sexual matters. Access to condoms and other prominent themes of sexual education are generally limited to couples engaged to be married. Many Iranians remain misinformed and undereducated about transmission and prevention of HIV/AIDS. The assumption that Muslims will categorically abstain from extramarital sexual contact is being reevaluated in the light of new evidence to the contrary especially among Iran's large youth demographic that tends to be more sexually active.

### Indonesia: Youth Bulge and Global Exposure

By focusing the majority of efforts toward those whose behavior is "deviant" by many Indonesian standards, HIV/AIDS prevention and treatment efforts still neglect, stigmatize, and discriminate against certain at-risk populations (Bennett, 2005). Efforts to combat social stigmatization at the political, cultural, and societal levels are critical to Indonesia's HIV/AIDS prevention and treatment efforts. Many initiatives undertaken thus far reveal a degree of urgency in stalling the spread of the epidemic, which Indonesian healthcare professionals have described as "explosive" (Mesquita et al., 2007).

At the political level, state and municipal governments are often prevented from supporting policies which can be interpreted as endorsing immoral behavior – such as using condoms – which many conservative Indonesians believe supports prostitution. Instead, the Indonesian government must use NGOs and other informal channels to access and provide politically charged prevention techniques to the larger general population. Depending upon NGOs has restricted HIV/AIDS surveillance, treatment, and prevention efforts. In order to ease these limitations, Indonesia now strategically relies on the assistance of key Islamic leaders that support the government's HIV/AIDS prevention efforts in order to alleviate and bypass social stigmas. Islamic leaders have shared published *fatwas* pertaining to HIV/AIDS and have declared *jihad* against HIV/AIDS instead of affected populations. Efforts undertaken by the state may – perhaps unintentionally – create a space for more liberal advocates who seek to reimagine Indonesia's traditional, conservative interpretations of Islam. In the longer term, such efforts may reduce the stigmatization of certain populations by virtue of increased awareness and visibility while simultaneously allowing for more effective and comprehensive HIV/AIDS intervention initiatives (USAID, 2007).

Indonesia's IDU demographic is a focal point of HIV/AIDS treatment and prevention efforts.

IDUs account for over fifty-four percent of new cases of HIV in Indonesia. This phenomenon and voluminous population is fueled by Indonesia's proximity to regional opium production in Asia's Golden Triangle and Afghanistan; Indonesia is home to over 3.2 million IDUs despite Islamic prohibitions against such practices (Mesquita et al., 2007). The prevalence of injecting drug users is correlated with underdevelopment. Nearly 21 % of Indonesians under the age of 25 are unemployed (World Bank, 2011).

Access to antiretroviral (ARV) treatment, a critical treatment in delaying the onset of AIDS, remains problematic. As of 2008 only three percent of Indonesia's IDUs are receiving ARV treatments. Despite a strong commitment to universal access to healthcare, Indonesians are often restricted from such care because of their socioeconomic status. Government-level subsidies help provide ARV treatment to 20 % of most impoverished Indonesians. Those that do not qualify under the government's strict standards and guidelines for subsidy assistance nevertheless are often still too poor to afford requisite treatments. This has a compounding effect on responding to the epidemic as ARV treatments have proven useful in slowing transmission of the virus.

Indonesia's traditionally strict adherence to Islamic principles is undergoing transition. The development of liberal subcultures in Indonesia can be attributed to globalization and greater exposure to Western ideologies (Purdy, 2006). Indonesia's enormous youth population – over 70 million people under the age of 15 – is challenging the traditional *Shari'a* practices of the older generations. Western-style radio and television networks that cater to youth audiences are growing more prevalent; broadcasts on these networks often include sex and relationship content, subjects that many still regard as taboo (Purdy, 2006).

The development of more liberal media niches has been instrumental to the Indonesian government's strategy for combating the spread of HIV/AIDS. State-led campaigns use these outlets to disseminate public health information that encourage condoms for "every risky sexual encounter." Media messages to conservative demographics are tailored accordingly (USAID, 2007).

The Indonesian government encourages NGOs and Indonesian Community-Based Organizations (CBOs) to disseminate information related to the prevention of HIV transmission (including information about condoms) to culturally and politically sensitive demographics including youth, faith-based organizations, and women. In this regard, the Indonesian government's ability to effect change remains constrained by acceptable discourses under *Shari'a* law that weighs heavily on the democratic process.

## Bangladesh: NGOs' Outreach to the Infected

According to some estimates, roughly 6,500 people are living with HIV/AIDS in Bangladesh (UNAIDS, 2011). This figure is generally believed to be underrepresentative of the actual number of Bangladeshis living with HIV/AIDS. Bangladesh is home to nearly 140 million people and shares a semi-porous border with India, the state with the highest number of HIV/AIDS cases in the region, a number believed to be well over 2.5 million (UNAIDS, 2009).

Bangladesh is at a critical juncture in its efforts to thwart the spread of HIV/AIDS. Bangladesh is expected to sign an agreement in the near future allowing India transit facilities through Bangladesh. Indian trucks would travel through Bangladesh to go to Assam from West Bengal. Truck drivers have been identified as having high-risk lifestyles for sexually transmitted disease (STD) transmission in India, Thailand, and sub-Saharan Africa (Gibney et al., 2002). This would exacerbate the problem manifold. It is unclear, however, whether truck drivers and helpers (men who travel on the trucks assisting drivers) in Bangladesh have high STD rates as there is no established system of monitoring them and little published and thus credible data on prevalence rates. Many Bangladeshi people are worried that the transit facility to India, along with closer economic ties more generally, would result in rapid proliferation of HIV in Bangladesh from Indian truck drivers.

Bangladesh has attempted to implement a number of policy reforms to address the needs of key at-risk populations. These populations include sex workers, mobile/migrant populations, IDUs, and MSMs – including transgender individuals or *hijra* (Khosla, 2009). Despite policy reforms implemented at the recommendation of international institutions such as UNAIDS and the WHO, adherence to these policies at the social and political level is not uniform.

Poverty is a similarity among many of Bangladesh's most at-risk populations. Bangladesh is one of the world's most impoverished countries. Fifty percent of the population lives below the internationally recognized poverty line (UNICEF, 2010). Many youth, homeless, and unemployed Bangladeshis turn to drugs in order to cope with the ► stress and pressures of their socioeconomic realities. Bangladesh has nearly 98,000 IDUs. While Bangladesh's overall HIV prevalence rate is below 1 %, in certain slums of Dhaka, Bangladesh's capital city, HIV prevalence among IDUs approaches 8 %. Outside of urban environments, HIV prevalence is near 2 % for the same IDU demographic. Even for those who do escape the cycle of drugs uninfected, there may be few alternatives except migrating in hopes of finding employment and a brighter future. Former drug users often face additional difficulties finding employment due to the social stigma attached to their previous IDU identity (Khosla, 2009).

Geographical disparities impact access to key HIV/AIDS prevention tools such as condoms and clean needles. In rural areas critical supplies may be out of reach unless they are provided through government-subsidized programs. Even then social stigmas may deter against accessing these services as utilizing them is a marker of engaging in socially inappropriate behaviors. As a result many Bangladeshis have developed a familiar cost-benefit mentality where it is more socially acceptable to be simultaneously unaware of one's HIV status and unprotected than the alternative.

Many Bangladeshis are drawn into migratory labor due to harsh economic conditions. Male migrant workers are four times more likely to engage in extramarital sex (Khosla, 2009). This makes Bangladesh's sex worker population a key point of intersection between socioeconomic factors and HIV/AIDS prevention efforts. Prostitution was legalized in Bangladesh in June 2000. Local civic ordinances may still allow law enforcement to enforce social standards of appropriateness. Bangladesh Penal Code 290, referring to "public nuisances," is frequently used to harass and punish sex workers. In practice, this law and others like it negate the space legalization of sex work might have created for more effective HIV/AIDS intervention efforts.

There is a lack of cohesion and uniformity between Bangladesh's different branches of government, especially the normative-leaning executive branch that in most democratic societies, like Bangladesh, tends to reflect larger social values (Islamic ideals) and the judiciary that seeks to uphold the state's constitutional principles. Although Bangladesh has constitutional provisions against discrimination, appropriate sexual discourses are still influenced by Islamic ideals and, in practice, are often incongruent with the state's nondiscrimination values. NGO workers are often harassed by police for possessing a large quantity of condoms for distribution to sex workers and other at-risk populations. Without distribution assistance, many female sex workers may not be able to purchase or use condoms due to cultural and legal prohibitions against extramarital sexual contact and condom use between non-married couples (Human Rights Watch, 2003).

Socioeconomic factors, the prevalence of migrant populations, and the legalization of prostitution have led to the emergence of a complex network of sexual encounters that demand additional intervention resources and strategies. Condom outreach efforts to sex worker subpopulations remain complicated due to social norms, but the impact of these populations is still widespread. There may be an exponential increase in HIV risk exposure even for individuals who do not directly engage in any behaviors typically associated with being high risk. Many clients of male sex workers outwardly appear to conform to social norms and pressures, such as marrying a partner of the opposite sex and often having children while still engaging in sexual acts with men, often sex workers. As this behavior is both taboo and legally prohibited, it is rarely disclosed to the female partner who may then unknowingly contract the HIV. Condom usage in this context is often extremely low (Khan, 1999). Under such circumstances, a comprehensive approach to HIV/AIDS prevention and treatment that addresses structural issues remains the only way to effectively tackle the challenges of the epidemic.

## Looking Ahead

Since the outbreak of the HIV/AIDS epidemic in 1981, many predominantly Muslim states have found themselves in a period of transition. Despite committing themselves to acknowledging certain inherent human rights as part of the Declaration of Commitment on HIV/AIDS, it is clear that many challenges remain to both human rights implementation and public health efforts. Where successful progress has been made on either front, it has not been through fiat or imposition at the government level; rather, it has stemmed from civil society and NGOs' efforts to target high-risk populations.

Findings presented here generally support the notion that Islamic religious affiliation is negatively associated with HIV prevalence and that future research on the projected course of the global HIV epidemic may consider Islamic religious affiliation as a significant sociodemographic factor associated with a reduced risk of HIV transmission (Gray, 2004). While it is true that a person is likely to get infected by HIV through blood transfusion, using contaminated needles, or using unsanitary medical facilities, most of the time it is risky sexual behavior or drug abuse that leads to HIV infection. In the end, however, effective HIV management is possible only when people are encouraged to forgo risky behaviors (Huda, 2007). Yet in most cases "blaming the victim" exacerbates stigmatization and exclusion. Tackling the increasingly multifaceted and complex dimensions of HIV/AIDS epidemic demands structural initiatives that embrace education, employment, and ► social inclusion. This point further underscores the importance of Islam in encouraging its adherents to act responsibly and assume responsibility.

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## Human Security

► Feeling Safe

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## Human Value Scale

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### Synonyms

Schwartz human values scale

### Definition

Criteria defining a value are the following: (1) values are beliefs, (2) values refer to desirable goals, (3) values transcend specific actions and situations, (4) values serve as standards or criteria, (5) values are ordered by importance, and (6) the *relative* importance of multiple values guides action (Schwartz, 2006; Rokeach, 1973).

### Description

Rokeach had suggested that values could be distinguished by their goal type into *terminal* (desirable end states of existence such as security and wisdom) and *instrumental* values (desirable modes of behavior such as honesty and helping). Schwartz ignored this distinction in analyzing the Rokeach data (Schwartz & Bilsky, 1987, 1990), arguing that any value could be an end state for which others are instrumental. Instead, he proposed that values could be organized according to the interests they serve – individual, collective, or mixed. Most importantly, he proposed that basic values could be organized according to their major motivational goal. He suggested that the Rokeach value items could be discriminated into seven motivationally distinct values: enjoyment, achievement, restrictive conformity, security, pro-social, maturity, and self-direction. Applying SSA, both Schwartz and Bilsky studies confirmed that these values were ordered in a circular arrangement in the order listed here. The authors suggested the need to refine these values and to identify additional, motivationally distinct values.

The full theory of basic values presented in 1992 specified ten motivationally distinct, basic individual values that are presumably recognized in all cultural groups (Schwartz, 1992). Schwartz derived these ten values from three universal requirements of human biological and social functioning: (1) needs of individuals as biological organisms (“*organism*”), (2) requisites of coordinated social interaction (“*interaction*”), and (3) requirements for the smooth functioning

**Human Value Scale, Table 1** The 10 basic values, their sources and items

| Values and their definitions | Sources | Specific items from the 56-item instrument |
|---|---|---|
| Benevolence: preservation and enhancement of the welfare of people with whom one is in frequent personal contact | Organism interaction group | helpful, honest, for giving, loyal, responsible |
| Universalism: understanding appreciation, tolerance and protection for the welfare of *all* people and for nature | Organism group | Social justice, equality, world at peace, protecting the environment, unity with nature, world of beauty, broadminded, wisdom |
| Self-direction: independent thought and action-choosing, creating, exploring | Organism interaction | Creativity, curious, freedom, choosing own goals, independent |
| Stimulation: excitement, novelty and challenge in life | Organism | Exciting life, varied life, daring |
| Hedonism: pleasure and sensuous gratification for one self | Organism | Pleasure, enjoying life |
| Achievement: personal success through demonstrating competence according to social standards | Interaction group | Ambitious, successful, capable, influential |
| Power: social status and prestige, control or dominance over people and resources | Interaction group | Social power, authority, wealth, preserving my public image |
| Security: safety, harmony and stability of society, of relationships and of self | Organism interaction group | National security, family security, dean, social order, reciprocation of favors |
| Conformity: restraint of actions, inclinations and impulses likely to upset or harm others and violate social expectations or norms | Interaction group | Obedient, honoring elders, self discipline, politeness |
| Tradition: respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide | Group | Respect for tradition, moderate, devout, humble, accepting my portion in life |

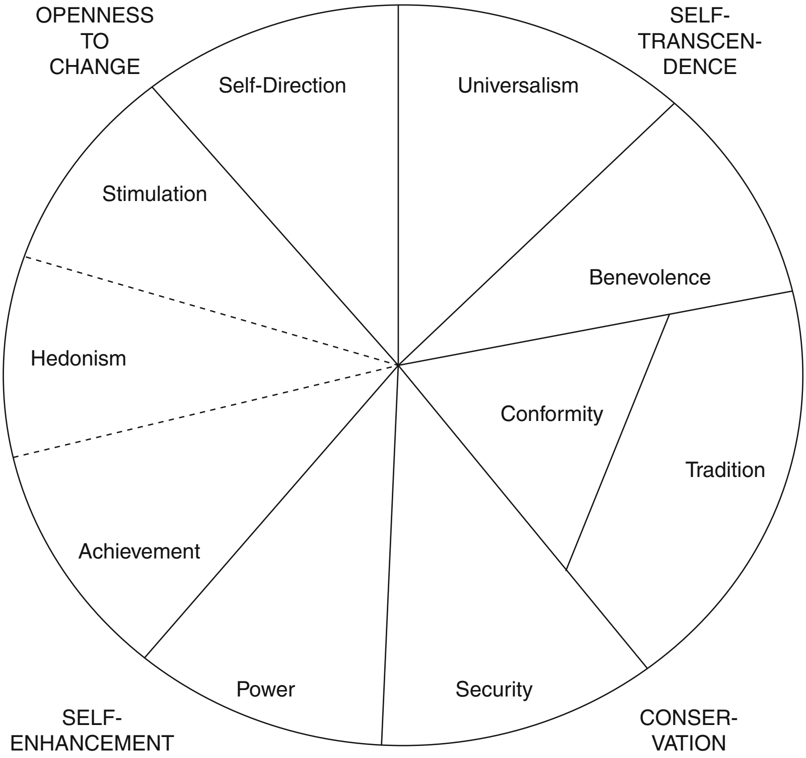
and survival of groups ("*group*"). Each of the ten values was grounded in one or more of these three universal requirements, as shown in Table 1.

Schwartz tested his theory with a new instrument designed explicitly to measure the ten redefined and relabeled values. The last column in Table 1 lists the single-value items from the initial 56-item instrument developed to operationalize the ten values (Schwartz, 1992). Schwartz speculated that the set of 10 basic value types might be exhaustive: "*It is possible to classify virtually all the items found in (existing) lists of specific values from different cultures [. . .] into one of these ten motivational types of values*" (1994, pp. 22–23).

The key feature of the theory of ten basic values is the idea that the values form the circular motivational continuum presented in Fig. 1. This theorized circular structure was confirmed initially in samples from 20 countries, using SSA. In addition to the organization of the values by individual versus collective interests, Schwartz noted that they could be described as lying on two orthogonal axes, self-enhancement (power and achievement) versus self-transcendence (universalism and benevolence) and openness to change (self-direction, stimulation, and hedonism) versus conservation (security, conformity, and tradition). The circular structure and two axes identify the conflicting and congruent motivations among the ten basic values. The closer any two values are in either direction around the circle, the more positive the conceptual and empirical association between them; the more distant they are, the less positive their association. If one value is theorized to relate positively to an attitude, behavior, or personal characteristic, its adjacent values should also relate positively to that variable. At the same time, the opposing values in the circle should relate less positively or even negatively to that variable. Substantial research has confirmed this general hypothesis (see Schwartz, 2006, for a summary).

In order to understand the proposed circular structure in depth, it is necessary to mention

**Human Value Scale, Fig. 1** The circular structure of the value theory of Shalom Schwartz



the method for arriving at the structure. Smallest space analysis (SSA) is a nonmetric technique for mapping items as points in a multidimensional space, such that the distance between points reflects the interrelations between items. The greater the conceptual similarity between items, the more related they should be empirically and hence the closer their locations should be in the multidimensional space (Guttman, 1968). Schwartz noted the following implications of his theory that SSA can represent: "Because values form a motivational continuum, the decisions about exact boundaries are arbitrary. Items near the boundaries of adjacent values inevitably overlap somewhat in meaning. Consequently, in analyses in many samples, value items from adjacent types of values intermix rather than emerge in clearly distinct regions" (Schwartz, 2006, pp. 942–3). Furthermore, "one could reasonably partition the domain of value items into broader or more fine-tuned distinct value constructs, depending on how finely one wishes to discriminate among motivations" (Davidov, Schmidt, & Schwartz, 2008, p. 424). We will return to these implications below.

## Measurement Instruments

The Schwartz values model has been operationalized in various ways. The first instrument, now known as the Schwartz Value Survey (SVS), included 56 (later 57) items (Schwartz, 1992). The Portrait Values Questionnaire (PVQ) aimed to reduce the cognitive complexity of the SVS (Schwartz, 2006; Schwartz, et al., 2001). It presents respondents with short verbal portraits of different people in terms of their goals, aspirations, or wishes that point implicitly to the importance of a single value. The portrait is drawn in two sentences. One sentence refers to importance: It is (very) important to him/her to [have an exciting life]. The other sentence refers to an aspiration or wish: He/she likes (or wants or thinks or believes or seeks) [surprises]. For each portrait, respondents answer, "how much like you is this person?" on a 6-point scale with the categories "very much like me, like me, somewhat

**Human Value Scale, Table 2** PVQ Items[a]

| |
|---|
| *Benevolence* |
| 12. It's very important to him to help the people around him. He wants to care for other people |
| 18. It is important to him to be loyal to his friends. He wants to devote himself to people close to him |
| 27. It is important to him to respond to the needs of others. He tries to support those he knows |
| 33. Forgiving people who might have wronged him is important to him. He tries to see what is good in them and not to hold a grudge |
| *Universalism* |
| 3. He thinks it is important that every person in the world be treated equally. He wants justice for everybody, even for people he doesn't know |
| 8. It is important to him to listen to people who are different from him. Even when he disagrees with them, he still wants to understand them |
| 19. He strongly believes that people should care for nature. Looking after the environment is important to him |
| 23.He believes all the worlds' people should live in harmony. Promoting peace among all groups in the world is important to him |
| 29. He wants everyone to be treated justly, even people he doesn't know. It is important to him to protect the weak in society |
| 40. It is important to him to adapt to nature and to fit into it. He believes that people should not change nature |
| *Self-direction* |
| 1. Thinking up new ideas and being creative is important to him. He likes to do things in his own original way |
| 11. It is important to him to make his own decisions about what he does. He likes to be free to plan and to choose his activities for himself |
| 22. He thinks it's important to be interested in things. He likes to be curious and to try to understand all sorts of things |
| 34. It is important to him to be independent. He likes to rely on himself |
| *Stimulation* |
| 6. He thinks it is important to do lots of different things in life. He always looks for new things to try |
| 15. He likes to take risks. He is always looking for adventures |
| 30. He likes surprises. It is important to him to have an exciting life |
| *Hedonism* |
| 10. He seeks every chance he can to have fun. It is important to him to do things that give him pleasure |
| 26. Enjoying life's pleasures is important to him. He likes to 'spoil' himself |
| 37. He really wants to enjoy life. Having a good time is very important to him |
| *Achievement* |
| 4. It's very important to him to show his abilities. He wants people to admire what he does |
| 13. Being very successful is important to him. He likes to impress other people |
| 24. He thinks it is important to be ambitious. He wants to show how capable he is |
| 32. Getting ahead in life is important to him. He strives to do better than others |
| *Power* |
| 2. It is important to him to be rich. He wants to have a lot of money and expensive things |
| 17. It is important to him to be in charge and tell others what to do. He wants people to do what he says |
| 39. He always wants to be the one who makes the decisions. He likes to be the leader |
| *Security* |
| 5. It is important to him to live in secure surroundings. He avoids anything that might endanger his safety |
| 14. It is very important to him that his country be safe from threats from within and without. He is concerned that social order be protected |
| 21. It is important to him that things be organized and clean. He *doesn't* want things to be a mess |
| 31. He tries hard to avoid getting sick. Staying healthy is very important to him |
| 35. Having a stable government is important to him. He is concerned that the social order be protected |

(*continued*)

**Human Value Scale, Table 2** (continued)

| |
|---|
| *Conformity* |
| 7. He believes that people should do what they're told. He thinks people should follow rules at all times, even when no-one is watching |
| 16. It is important to him always to behave properly. He wants to avoid doing anything people would say is wrong |
| 28. It is important to him to be obedient. He believes he should always show respect to his parents and to older people |
| 36. It is important to him to be polite to other people all the time. He tries never to disturb or irritate others |
| *Tradition* |
| 9. He thinks it's important *not* to ask for more than what you have. He believes that people should be satisfied with what they have |
| 20. Religious belief is important to him. He tries hard to do what his religion requires |
| 25. He believes it is best to do things in traditional ways. It is important to him to follow the customs he has learned |
| 38. It is important to him to be humble and modest. He tries not to draw attention to himself |

[a]Items are numbered according to their order in the questionnaire

like me, a little like me, not like me, not like me at all." This comparison focuses them on the specific values rather than on their whole self-concept (Schwartz, 2007). Respondents own values are inferred from their self-reported similarity to people described implicitly in terms of their values. The items of the 40 item PVQ are presented in Table 2. For the short version of the PVQ used by the European Social Survey, we refer to the ESS website.

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▶ Values

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# Human Values and Well-Being in Europe

▶ Well-Being and Personal Values in Europe

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# Human Values and Well-Being in Migrants

▶ Well-Being and Values of Immigrants to Spain

# Human Well-Being in India

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## Synonyms

Interdecile human development index (IDHDI) in India

## Definition

▶ Human development index (HDI) of UNDP is a composite index encompassing selected information on ▶ education, expectation of life at birth, and measures of ▶ material well-being. "Interdecile HDI (IDHDI) in India" are the estimates of HDI values by income decile groups of population at all-India level.

## Description

### Motivation

The process of development in any society should ideally be viewed and assessed in terms of the benefits and opportunities that it generates for people and how these are eventually distributed among different sections of the society. Up to the middle of the 1970s, economists believed that economic growth would automatically lead to overall development of the society. According to these economists ceteris paribus, countries with higher income levels could be expected to have higher levels of achievement in basic ▶ capabilities such as longevity and ▶ knowledge, simply because these countries have more resources to spend on ▶ health care and ▶ education (Anand & Ravallion, 1993; Kakwani, 1993). But experience shows that economic prosperity measured in terms of per capita income does not always ensure enrichment in ▶ quality of life reflected in broader dimensions of well-being like longevity and ▶ literacy.

The ▶ human development approach of UNDP (Human Development Report [HDR], 1990) is an effort to generate, in the contemporary development discourse, a policy focus on the broader attributes of human well-being. The conceptual basis of human development approach developed by UNDP is closely related with notion of standard of living described by Sen (1985, 1987), where he defined standard of living in terms of (1) functioning, which indicates attainment of different attributes, and (2) capability, which is the ability to attain.

UNDP's HDI is an attempt to sense the human development across the nations, but it might be worthwhile if the index is computed for smaller areas and for various segments of the population (HDR, 1994). The issues relating to human development in Indian context is meager. Dutta, Panda, and Wadhwa (1997) worked on the human development in India, at national and provincial level for two decades, the 1970s and 1980s, using data published by different departments of the Government of India, viz., Sample Registration System (for ▶ mortality data), Ministry of Human Resource Development (for education), and Central Statistical Organization (for state gross domestic product). Their major empirical finding was that India attained significant improvement in health and education during these two decades. Similar finding was reported by Indrayan, Wysocki, Chawla, Kumar, and Singh (1999), using census data for three consecutive decades, viz., 1971, 1981, and 1991. A survey of 33,000 rural households was undertaken in 1994 to generate a state-wise human development profile for India (IHDR, 1999). Planning Commission of India (NHDR, 2002) prepared national- and provincial-level HDI over the period of 1971–1991 separately for rural and urban sectors. Very recently, Desai et al. (2011) embarked on a challenging task of contributing information based from a survey of over 41,500 Indian households providing indicators required to assess human development in India both at national and provincial level.

India is a socialistic democratic country, where equality and egalitarianism guide the process of development. It is quite natural that in such a country, people living under the same political territory would have parity in their ▶ quality of life. For better understanding towards the rapid growth of Indian economy since the 1980s in the daily lives of the ordinary people, cross-income group estimates of human development would be a reliable option. Income in nominal term is not comparable over time. Hence, estimates of HDI by income decile groups can serve the purpose more effectively. In this context, Das (2008) estimated IDHDI in India to address the broad issues as stated below:

1. If the favorable outcome of economic growth spreads over each section of the society
2. If any encouraging change had been taking place in terms of attainment in health, education, and income over time
3. If any prominent interdecile regional disparities were reflected in IDHDI values

## Methodological Issues

### Data

To estimate IDHDI in India over time, a set of monthly per capita expenditure (MPCE) class-wise grouped household data of National Sample Survey (NSS), for 43rd (1987–1988) (NSSO, 1995, 1997), 50th (1993–1994) (NSSO, 1995, 1997), and 55th (1999–2000) (NSSO, 2001a, 2001b) rounds, were used in Das (2008). It is well known that household expenditure is more closely related to the standard of living of a household than income, so one can consider MPCE, in place of income, as representing the standard of living of the household.

IDHDI needs information on all the three broader dimensions of HDI, by income/expenditure decile groups. NSS only provides grouped household data by different MPCE classes in Indian context. These are available in various published reports of NSS on "Household consumer expenditure in India" and "Employment and unemployment situation in India." Not all the right kind of data, as required for adopting UNDP's methodology, is available in these reports, but restoring the prime objective where the study involves the social valuation and the development priorities of the country, some adjustments were affordable (Das, 2008).

In scaling the diverse indicators, the primary consideration has been towards making attainment on each of them comparable and at the same time ensuring that the selection of end points, i.e., the maximum and the minimum values on the scale, for each indicator are such that they support intertemporal comparison (Das, 2008).

### Formulation of IDHDI

In Das (2008), the first step in the construction of IDHDI was to compute an attainment index for each individual component of each decile group separately. A maximum and minimum value was set out for each component given the actual values. The maximum and minimum values for educational attainment (EDU) and health attainment (ELB) were taken as suggested by UNDP. Setting out of maximum and minimum values of MPCE required consideration of MPCE between 1987–1988 and 1999–2000 of all the states, separately for rural and urban. Though it is an issue of much debate for considering weight to combine the diverse indicators of well-being, Das (2008) determined it on a purely empirical basis by employing the method of ▶ principal component analysis as against an arbitrary approach putting equal weight for all the indicators.

### Interdecile Attainment in Education (EDU)

UNDP considers adult literacy rate (ADLI) and combined enrolment ratio (HDR, 95) for determining the ▶ educational attainment. NSS provides ADLI by MPCE classes, but not MPCE class-wise data for combined enrolment ratio. So it needs some alternative approach. The enrolment of children in schools depicts the current flow or the spread of education. There are alternative measures to capture the flow aspect of education. Among the more commonly used measures, gross enrolment ratio, age-specific enrolment ratio, net enrolment ratio, ▶ dropout rates, and school attendance rates are much relevant (NHDR, 2002). NSS does not provide enrolment data on a regular basis, and so, school attendance rate (SCHAT) by MPCE classes can be taken as a proxy of enrolment ratio to capture the flow aspect of educational attainment. SCHAT then is simply the percentage of students in the age group of 6–23 years, who are currently attending schools in the relevant stages. Das (2008) considered ADLI, along with SCHAT, for computing combined educational attainment, EDU.

The interdecile values of EDU measured the relative performance of ten decile groups in terms of combined educational attainment (Das, 2008). Three major findings of this study were (1) large variations in interdecile improvement in EDU, (2) improvement in upper decile groups showing greater rate of achievement compared to lower decile groups over time, and (3) in spite of existing wide rural-urban gap, rate of improvement is much higher for rural sector compared to urban sector. The wide gap in index values of EDU among the decile groups over time reveals the persistent interdecile disparity in the attainment of education.

### Interdecile Attainment in Life Expectancy at Birth (ELB)

Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. Life expectancy at birth is also a measure of overall quality of life in a country and summarizes the mortality at all ages. For estimating interdecile life expectancy at birth, one needs mortality data by decile groups. As NSSO does not collect data on mortality on a regular basis, so life expectancy at birth by decile groups of MPCE cannot be calculated directly in Indian context. Hence, an indirect method needs to be adopted. Among many of the standard techniques, choice of a suitable technique depends on the readily available data set. Das (2008) described an indirect method for estimating interdecile life expectancy at birth in India. The tables of stable populations and model life tables presenting life expectancy at birth by mean ages (Coal & Demeny, 1983) were utilized for this purpose. According to Coal and Demeny (1983), among the four families of stable populations, “West” family was utilized in the usual circumstances for underdeveloped countries. Das (2008) adopted this “West” table for estimating interdecile life expectancy at birth in India. Interestingly, the estimated life expectancy at birth, at all-India level, did not differ largely with the estimates made by the Planning Commission of India using mortality data of Sample Registration System of India (Das, 2008).

The ELB values, estimated in an indirect method in Das (2008), measure the relative attainment in life expectancy at birth of ten decile groups, separately for rural and urban sectors. On the whole, the estimated ELB were healthy enough for each time period under consideration, irrespective of all decile groups in both the regions. Secondly, no systematic intertemporal or interdecile variations could be noticed. ELB of the urban people, especially, those belonging to the lower decile groups, were far ahead compared to their rural counterparts.

### Interdecile Economic Attainment

UNDP considers per capita GDP as an indicator of economic attainment of material well-being. Das (2008) measured the economic attainment in terms of attainment in MPCE by ten decile groups. To make the estimates amenable to intertemporal comparison, Das deflated them by consumer price index numbers. The consumer price index numbers of agricultural laborers for rural sector and industrial workers for the urban sector were used for expressing the MPCE at constant prices over time. Das showed, as a whole, a quite low attainment in economic well-being in India during the study period. An overall systematic temporal improvement also is noted in this study. Unfortunately, greater extent of interdecile disparities in economic attainment had been pronounced compared to the attainment in health and education.

### Estimated IDHDI in India

Das (2008) used IDHDI in India to assess the spread of economic growth across different sections of the economy. The interdecile index values for three indicators showed highest attainment in health, followed by attainment in education and MPCE. At international level, this phenomenon is much common in developing countries (HDR, 2011). On the whole, the IDHDI values for urban were satisfactorily high, but for the rural, they were not so hopeful. The IDHDI values showed significant improvement over time, although wide interdecile gaps were evident in both the sectors. Regional differences in IDHDI values were commonly seen in each time period, with lower values for the rural sector. While explaining the large variations in IDHDI values, exceptionally low MPCE values for lower decile groups appeared as to be the prime responsible factor.

## Discussion

The study of IDHDI in India (Das, 2008) pursues the UNDP's perspective on human development experience, across decile groups of population, that has implications in terms of policy prescriptions suggesting what should be the proper orientation of development policies in India, so that the economic gains may be more eventually distributed among different sections of the society and different regions of the country as well. IDHDI can be estimated for any other developing country for identifying the priority sectors in ensuring better quality of life of people of the country. But the study was limited with some constraints. It may be mentioned that estimates of ELB, obtained following indirect technique stated in Das (2008), were not the ultimate and there is future scope to obtain finer estimates. Estimating IDHDI for each state could be a worthwhile exercise to depict the comparative position of the states in India. It is difficult to make a comprehensive assessment of IDHDI in explaining interdecile, regional, or intertemporal differences in performance without any hypothesized testing to see if these differences are statistically significant. It should also be noted that in Das (2008) HDI of UNDP had been considered as the key measure of human well-being. The concept of HDI is not beyond criticisms. Although it is still revolving, the major criticism of HDI is related to the idea of measuring human well-being by a conceptually limited ▶ composite index. For example, Baliamoune-Lutz (2004) proposed an alternative framework using fuzzy-set theory to measure human well-being. The results indicated that the UNDP's HDI and human well-being, as measured using fuzzy sets, yield different levels of well-being for some countries. Noorbakhsh (1998) proposed modified HDI (MHDI) suggesting some improvements on the components of the index as well as proposing an alternative structure for the index itself. Foster, Calva, and Szekely (2005) suggested a new methodology to introduce the inequality dimension into the HDI. All these alternative approaches might be tried out in an attempt to estimate human well-being by income decile groups in any country context.

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## Human Well-Being in the Arctic

► Arctic Human Development Report (AHDR)

## Human-Animal Bond

► Pets and Quality of Life

## Humanness

► Ubuntu: The Good Life

## Hume's Guillotine

► Fact/Value Dichotomy

## Hume's Law

► Fact/Value Dichotomy

## Humor

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### Synonyms

Caricatures; Clowns; Comicality; Jokes; Playful state of mind; Sense of humour; Sense of Humour Questionnaire (SHQ-6)

### Definition

A social phenomenon that is reflected in playful interaction and mirthful communication, whereas sense of humor is a characteristic of the individual and reflects readiness for understanding as well as producing humorous cognitive processes and to display related effects of smiling and ► laughter.

### Description

The social phenomenon of humor is present in every human society. It can be a significant element in playful interaction and takes a variety of forms, verbally and nonverbally, and closely reflects the level of cognitive functioning as well as social and personal history of the participants. Philosophers, in particular, have analyzed and discussed the functions of humor since Hippocrates (400 BC) proposed that good health depends upon a well-balanced proportion of the four body fluids or "humors" (blood, phlegm, yellow bile, black bile). In the medieval period, a "humor" often referred to unbalanced temperament, odd behavior, and eccentric individuals (Martin, 2007).

William Shakespeare described the role of the court jester in several of his plays including "King Lear." The jester was employed for the purpose of general amusement and to facilitate good digestion during meals. Modern societies have a number of ways to provide sources of amusement through institutions such as professional entertainers in ▶ music halls and mass media, and they act through a diversity of techniques such as comedy, parody, satire, and irony. Social identity and group cohesiveness are effects of shared humor and, therefore, gain particular importance in maintaining group morale when societies encounter stressful times such as military invasion when humor becomes part of the underground movement.

Sigmund Freud regarded jokes as reflections of sexual or aggressive impulses, whereas sense of humor was acknowledged as being a positive defense mechanism helping individuals to cope with adversities of everyday life (1928). Therefore, sense of humor was regarded as a sign of mental health as well as admitted a role in psychotherapy. The concepts of humor and sense of humor are broad and complex. A pioneering analysis of sense of humor defined sensitivity to humorous meta-messages, liking of humorous situations, and others as well as tolerance for mirthful expression as the three-core dimensions to be assessed in measurement of sense of humor. These assumptions led to the development of the Sense of Humor Questionnaire and revisions that include only a few questions (e.g., SHQ-6: Svebak, 2010).

Several alternative ways of assessing sense of humor have been proposed over the recent years. One of them applies two criteria (friendly versus hostile and other- versus self-directed) to provide scores on four humorous styles (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). Interestingly, the genetic importance is clearly higher in the affiliative humor styles, whereas hostile humor essentially appears to be acquired. Scores on the SHQ-6 reflect affiliative humor and are unrelated to hostile humor.

The cognitive process probably is the core of sense of humor. Apter & Desselles (2012) have precisely defined it as one type of cognitive synergy that comes in two forms, either as disclosure or distortion humor, both causing some kind of identity diminishment. All jokes are examples of the former, and clowns and caricature are examples of the latter. The effect of diminishment is downscaling of any kind of frustration, hassle, or stressor in everyday life when perceived through the sense of humor. This effect, apart from giving rise to mirth, is a positive way of coping that accounts for beneficial effects upon social relations as well as biological health.

A recent large-scale comparison across five cultures stated that spousal humorousness was associated with ▶ marital satisfaction, kindness, understanding, and dependability (Weisfeld, Nowak, Lucas, et al., 2011). Two prospective studies of sense of humor and longevity have been conducted with SHQ scores on sense of humor. Findings confirmed traditional beliefs that sense of humor, friendly in style, significantly prolongs life. Future research on the humor-health relationship may show that this effect is restricted to affiliative humor.

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## Hungarostudy Epidemiological Panel (HEP)

► Life Goals and Well-Being in Hungary

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## Hunger

► Food Security

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## Hunger Rates in the US States

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### Synonyms

Food insecurity in US States; Very low food security

### Definition

The percentage of households in a region, state, or group of people who show multiple indications of disrupted eating patterns and reduced food intake; sometimes called very low food security, hence, a more severe form of household food insecurity. Concentrated among low-income households.

### Description

#### Hunger and Food Insecurity Concepts

The physical necessities of food and shelter are central to ► quality of life. But for many years, the presence of domestic hunger in the USA was widely ignored by social scientists. However, over the past two decades, the subject of household food insecurity and domestic hunger has increasingly captured the attention of researchers in the social and medical sciences (Alaimo, 2005). Although not informed specifically by the concept of quality of life, the US Department of Agriculture has measured household food insecurity since the mid-1990s (Nord et al., 2002). The construct of "food insecurity" connotes not only an objective experience of lacking food but also the subjective angst that accompanies disruptions and anticipation of disruptions in household food supply. This double experience of objective lack and subjective concern about a lack of food is revealed in the official description of food-insecure households which are said to be "uncertain of having, or unable to acquire, enough food to meet ► basic needs for all household members because they had insufficient money and other resources for food" (Nord et al., p. 3). The rationale for emphasis on money derives from the fact that the vast majority of contemporary Americans purchase rather than produce their own food. The official definition also seeks to distinguish this experience from physical feelings of hunger that could result from fasting or dieting.

Among food-insecure households is a subset of households described as experiencing "very low food security," a condition known until 2008 as "food insecurity with hunger." An external review panel advised USDA to eliminate the word "hunger" from the official nomenclature because the measures of food insecurity do not ask about physical sensations or physiological outcomes of hunger that most people would associate with not eating (Nord, Finberg, & McLaughlin, 2009). Households with very low food security are now simply said to show "multiple indications of disrupted eating patterns and reduced food intake” (US Dept of Agriculture [USDA], 2012a).

### Measuring Food Insecurity and Very Low Food Security (“Hunger”)

Estimates of US food insecurity are based on data from an annual Food Security Supplement in the December delivery of the Current Population Survey conducted by the Census Bureau. This survey asks a series of 18 questions about “conditions and behaviors known to characterize households having difficulty meeting basic food needs” (Nord et al., 2002, p. 2). Respondents are asked whether these conditions or behaviors occurred during the past 12 months. Each question specifies that the behavior or condition should be due to lack of money or other resources. The responses to these 18 questions are used to classify households into three categories of households – those who experience food security, low food security, and very low food security (formerly known as food insecurity with hunger). (See Nord et al. and Bickel, Nord, Price, Hamilton, & Cook, 2000 for a more complete description of the procedure for classifying households.) This measure of food insecurity and very low food security permits researchers to examine patterns of need across groups and places.

### Historic Patterns

Since it was first measured in the mid-1990s, the food insecurity rate in the USA remained around 11–12 % until the Great Recession began in 2008, when the percentage jumped to 14–15 %. The rates of very low food security also remained fairly stable during the first period (around 4 % of households), but this number increased to around 6 % during the recession. (See Coleman-Jensen, Nord, Andrews, & Carlson, 2011; Nord et al., 2002). Annual fluctuations in food insecurity and very low food security roughly coincide with less dramatic changes in economic conditions. However, they do not precisely track, in part due to relief program efforts and in part due to the fact that annual measures of food insecurity ask people about experiences during the entire previous year but ▶ unemployment rates measure labor force outcomes of just the last month prior to the interview.

State rates of food insecurity and very low food security vary more dramatically from year to year due to state differences in relief program participation, economic conditions, and methodological limitations such as small sample sizes in small population states. Statistics reported by the USDA use 3-year moving averages rather than annual rates. States that have repeatedly shown high rates of food insecurity are New Mexico, Mississippi, Utah, and Texas. States that have repeatedly shown high rates of very low food security in the past 15 years include Mississippi, Alabama, Arkansas, Oklahoma, and Oregon.

### Correlates

Individual and household resource variables as well as areal-level, contextual variables correlate with household food insecurity. Annual USDA reports show higher rates of food insecurity and of very low food security among the same groups that suffer from low income: female-headed single-parent households, racial and ethnic minority group members, and households with less formal ▶ education. Single men have higher very low food security rates than single women or two-adult households. Central city areas show higher rates, followed by rural areas, with lowest rates of food insecurity and very low food security in the suburbs. (See online annual reports by USDA for up-to-date analyses.) Temporal change during the year also influences families’ vulnerability. For example, Nord and Kantor (2006) found that low-income households, especially those with elderly residents, experienced seasonal food insecurity related to heating and cooling costs.

Bartfeld (2005) offers the most persuasive explanation for state-level differences in rates of food insecurity and rates of very low food security. She finds that household measures of income, education, housing tenure, rurality, family size, and family type, plus state-level measure of food programs, tax burden, unemployment, median rent, and average wages, all combined, explain nearly all of the variation in very low food security rates across states. Other studies such as Tapogna, Suter, Nord, and Leachman (2004) and Edwards, Weber, and Bernell (2006) confirm these findings using other methods, sometimes considering additional variables such as home ownership rates and cost of living. For example, Tapogna et al. found that state rates of food insecurity increase with the percentage of renters spending over half of their income on gross rent.

## Outcomes and Responses

New concerns about hunger as a medical issue in the USA have inspired new research on the effects of hunger on children's physical, emotional, and social health. Gunderson and Kreider (2009) suggest that extant literature underestimates the negative impacts of hunger on children. Fortunately, families experiencing food insecurity often insulate their children from experiencing very low food security. Nord (2009) finds that. 8 % of American households had children experiencing very low food security. But while 16 % of US households with children were food insecure, half of the time only the parents were food insecure, with the children being adequately fed. Other research reveals that coping mechanisms vary by place. Mammen, Bauer, and Richards (2009) found that food-insecure households in otherwise food-secure states responded differently to their circumstances than did those in states with high rates of food insecurity.

## Policy Actions/Programs in the USA

Federal response to food insecurity in the USA comes primarily in the form of the Supplemental Nutrition Assistance Program (known as "SNAP" but formerly known as "food stamps"). Due to increasing numbers of qualified families (i.e., rising levels of poverty during the recession) and an improvement in methods to enroll eligible families, about 21 million households were enrolled in SNAP in 2012. SNAP enrollment has been shown to reduce food insecurity at the household level (Yen, Andrews, Chen, & Eastwood, 2008). No existing research has examined the possible link between SNAP participation rates for states and state rates of food insecurity. Human service agencies for the various 50 states deliver this food assistance, following federal guidelines, but granted some latitude in how they enroll and serve low-income people. Children from low-income families qualify for the free and reduced price lunch program in public schools. A second federally supported approach to reducing food insecurity is the Emergency Food Assistance Program which distributes commodity foods (canned fruits and vegetables, beans, rice, soup, meat, etc.) purchased from producers and distributed via various nonprofit groups (USDA, 2012b). This federally funded food supply, plus donations by individuals, is distributed through a nonprofit, nongovernmental emergency food network of groups who provide food boxes, community food sites (i.e., "soup kitchens"), and other feeding programs.

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## Hyperkinetic Disorder (HKD)

▶ Attention-Deficit/Hyperactivity Disorder (ADHD)

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## Hypersexual Disorder

▶ Compulsive Sexual Behavior Inventory

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## Hypothesis of Equivalence of Measurement Instruments

▶ Invariance Hypothesis

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## Hypothesis Testing

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### Synonyms

Test statistic

### Definition

Hypothesis testing is a way of systematically quantifying how certain is the result of a statistical experiment. It is a common practice in science that involves conducting tests and experiments to see if a proposed explanation for an observed phenomenon works in practice (Good, 2000).

### Description

It is one of the most important tools of applied statistics to real life problems and is used to determine the probability that a given hypothesis is true or not (Johnson & Bhattacharya, 1992). In any field of science, from physics and chemistry to economics and sociology, practitioners often pursue questions using this method. A hypothesis is a tentative explanation for some kind of observed phenomenon and is an important part of the scientific method. A hypothesis is a proposition or statement about the world confronted with facts and thus can be refuted or confirmed by those facts. This kind of test is a way for obtaining results based on a hypothesis performed on ▶ sample data from a larger population. Performing a hypothesis test on sample data is an attempt to determine if the mean of a population is the same as the mean of the sample (Schefler, 1988). It is a set of steps, commonly employed by those in scientific fields to give scientific explanations for various phenomena. There are five steps to any statistical test (Kennedy, 1998): (a) null hypothesis, commonly represented by H0 (the null, invalid, void, or amounting to nothing hypothesis is what the researcher hoped to reject); (b) alternate hypothesis commonly represented by Ha; (c) test statistic; (d) rejection/critical region; and (e) conclusion. The outcome of the test regarding the population parameter will be either a rejection of the null hypothesis or a failure to reject the null hypothesis. Two types of errors can occur or incorrect conclusions can be drawn (Lehman, 1997). If a null hypothesis is incorrectly rejected when it is in fact true, this is called a Type I error (also known as a false positive). A Type II error (also known as a false negative) occurs when a null hypothesis is not rejected despite being false.

## Cross-References

- ▶ Statistical Experimental Design

## References

Good, P. (2000). *Permutation tests: A practical guide to resampling methods for testing hypotheses* (2nd ed.). New York: Springer.

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Lehman, E. L. (1997). *Testing statistical hypotheses* (2nd reprint ed.). New York: Springer-Verlag.

Schefler, W. C. (1988). Statistics: *Concepts and applications*. Redwood City, CA: The Benjamin/Cummings Publishing.

## Hypothesis Testing Error

- ▶ Type I Errors
- ▶ Type II Errors

## Hypothesis Tests

- ▶ Univariate Tests

## Hypothetical Variables

- ▶ Latent Variables