Chapter 3
The Complete Mental Health Model: The Social Distribution of Mental Health and Mental Illness in the Dutch Population

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Mental health care has undergone a vigorous process of professionalization during the past few decades. Epidemiological studies have provided a wealth of information on the distribution of mental health problems in the general population and have identified important risk factors for developing mental disorders. Nowadays, the diagnostic process is supported by well-defined classifications of disorders, such as the Diagnostic and Statistical Manual, as well as valid instruments to assess them. Mental health treatments have become rationalized thanks to careful trials of their effectiveness. Lately, the ideal of the psychologist as a scientist-practitioner appears to be more alive than ever, at least within educational training. Taken together, this process has resulted in more evidence-based approaches, as well as in transparency and control in mental health care. This has also brought more widespread and, indeed, legal recognition of mental health professions.

One might wonder, however, what might be the cost associated with this professionalization process. To being, one of the most prevalent and noticeable costs is that mental health care focuses almost exclusively on malfunctioning and disorders (Maddux 2009; Vaillant 2003). Even though mental health is a positive term, it is basically defined as the absence of disease. Over the past 50 years, all efforts in public mental health care have been directed toward the prevention and treatment of mental illness (Keyes 2007). Yet, evidence is accumulating that the absence of mental illness does not imply that individuals are functioning optimally. In other words, mental health is more than the absence of disorders. The promotion and protection of mental health as a positive state is therefore a promising new goal in mental health care (Fledderus et al. 2010).

Epidemiological studies on positive mental health provide an important foundation for this new goal as they make clear just what, exactly, the state of mental health in a given population is and how mental health is socially distributed in that

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population. In this chapter, we propose a theory for studying positive mental health, its relation to the absence of mental illness, and the social distribution of mental health and illness using a longitudinal, nationally representative survey of Dutch adults.

Mental Health Combines Two Traditions of Happiness

The World Health Organization (WHO) has recently drawn attention to mental health as a positive state. Mental health is described as "a state of well–being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO 2004, p. 12). The three core elements in this definition are (1) well-being, (2) effective functioning of an individual, and (3) effective functioning within a community. A further conceptual and empirical translation of subjective evaluations of these core elements can be found in the research literature on different aspects of well-being (Westerhof and Keyes 2008, 2010).

Two traditions of well-being research are distinguished in present-day social psychology: the one focusing on hedonic well-being and the other on eudaimonic well-being (Keyes et al. 2002; Ryan and Deci 2001; Waterman 1993). Traditional studies of hedonic well-being focus on feelings of satisfaction, happiness, pleasure, and interest in life. Waterman (1993) has argued that this tradition shares similarities with the old Greek philosophy of hedonism, incorporated, among others, by Aristippus. In hedonism, the pursuit of pleasure is the central aim in life. In social sciences, the study of hedonic aspects of well-being dates back to survey research in the 1960s and 1970s. Scholars like Andrews and Withey (1976), Bradburn (1969), Campbell et al. (1976), Cantril (1965) and Gurin et al. (1960) were interested in the quality of American life from the perspective of American citizens themselves. To stress this perspective, the concept of subjective well-being was used (Diener 1984). At present, there is a widespread consensus that subjective well-being is a multidimensional concept, including cognitive evaluations of life in general (i.e., life satisfaction); positive affects such as pleasure, interest, and happiness; and the absence of negative affects such as depression, anxiety, nervousness, and hostility (Diener 1984; Diener et al. 1999).

Building on this tradition, we focus on positive states of subjective well-being because the negative states share similarities with mental illness. As other aspects of well-being also refer to individuals' subjective interpretations, we prefer to use the concept *emotional well-being* rather than subjective well-being. Emotional well-being thus refers to positive emotions as well as positive emotion-laden cognitions.

In the 1980s and early 1990s, there was some discomfort with the largely empirical way in which well-being was defined in the hedonic tradition (Ryff 1989; Waterman 1993). Psychologists started to reflect on the notion of well-being in terms of individual strivings and optimal functioning. This gave rise to the second strand of research, called *eudaimonic well-being*. The concept of eudaimonia dates

back to Aristotle, for whom not happiness, but the realization of one's own potential, was the essential element of a good life (Waterman 1990, 1993, 2008). Although the eudaimonic tradition is too short to have developed a crystallized set of indicators such as those for hedonic well-being, the conceptual and empirical work of Ryff has become most influential (Ryff 1989; Ryff and Essex 1991; Ryff and Keyes 1995; Ryff and Singer 2008). Ryff studied earlier psychological theories on optimal lifespan development (Erikson, Jung, Neugarten), on optimal functioning and self-actualization (Allport, Maslow, Rogers), and on positive mental health (Jahoda). She found six elements of positive functioning from this literature. Together, these make up what she calls *psychological well-being*: self-acceptance, personal growth, purpose in life, environmental mastery, autonomy, and positive relations with others (Ryff 1989; Ryff and Keyes 1995). Each of these six dimensions is important in the striving to become a better person and to realize one's potential:

1. Self-acceptance—a positive and acceptant attitude toward aspects of self in past and present
2. Purpose in life—goals and beliefs that affirm a sense of direction and meaning in life
3. Autonomy—self-direction as guided by one's own socially accepted internal standards
4. Positive relations with others—having satisfying personal relationships in which empathy and intimacy are expressed
5. Environmental mastery—the capability to manage the complex environment according to one's own needs
6. Personal growth—the insight into one's own potential for self-development

The work of Ryff, like other psychological work on eudaimonic well-being, focuses mainly on optimal functioning in terms of individual fulfillment (Deci and Ryan 2008; Ryan and Deci 2001; Waterman 1990, 1993, 2008). It thereby neglects the societal embedding of a person. Just like Ryff studied the classical psychologists, Keyes (1998) studied the work of major sociologists and social psychologists, such as Marx, Durkheim, Seeman, and Merton, to find indicators of what it means to prosper in a social way. His conceptual analysis indicates that *social well-being* consists of at least five dimensions:

1. Social coherence—being able to make meaning of what is happening in society
2. Social acceptance—a positive attitude toward others while acknowledging their difficulties
3. Social actualization—the belief that the community has potential and can evolve positively
4. Social contribution—the feeling that one's activities contribute to and are valued by society
5. Social integration—a sense of belonging to a community

Emotional, psychological, and social well-being together make up positive mental health (Keyes 2005). This conceptualization nicely fits the WHO definition of positive mental health (Westerhof and Keyes 2008, 2010): Emotional well-being

corresponds to the notion of well-being as used in the WHO definition, psychological well-being is a subjective appraisal of one's effective individual functioning toward self-realization, and social well-being is a subjective evaluation of one's effective functioning in the community.

The Tripartite Structure of Mental Health

Now that the concept of mental health has been elucidated, an important question becomes how different aspects of mental health relate to each other. Some have claimed that hedonic well-being is qualitatively different from eudaimonic well-being (Ryff 1989; Waterman 1993), whereas others argue that they are related (Ryan and Deci 2001) or even indistinguishable (Kashdan et al. 2008). The present study helps to accumulate more evidence about the relations between the different forms of well-being that make up the subjective evaluation of positive mental health.

There are theoretical reasons why hedonic and eudaimonic well-being are related to each other. On the one hand, fulfilling the need for self-realization and being part of a society that values your person and your contributions leads to higher levels of satisfaction and happiness in life. Positive affects are a kind of by-product of eudaimonic involvement in life. However, the process might also function the other way around: Positive affect may make it easier for individuals to achieve fulfillment.

There are also theoretical reasons why different forms of well-being are distinct. It is possible that leading a life toward fulfillment and social value does not always bring emotional well-being. On the one hand, working toward self-realization or being engaged in social life might call for personal sacrifices in terms of hedonic feelings. On the other hand, being happy and satisfied with one's present life might divert one's attention from striving toward individual and social fulfillment or even lead to some sort of inertia. Similarly, psychological and social well-being might contribute to each other's fulfillment, but they might also be somewhat antagonistic: Focusing only on self-realization might come with a cost in terms of societal commitments, and vice versa.

Factor-analytic approaches have typically provided evidence for the distinction between hedonic and eudaimonic well-being. Studies focusing on emotional and psychological well-being have consistently shown that a two-factor model describes well-being data better than a one-factor model (Compton et al. 1996; Kafka and Kozma 2002; Keyes et al. 2002; King and Napa 1998: McGregor and Little 1998; Ryff and Keyes 1995; Waterman 1993; Waterman et al. 2008). Similarly, studies on emotional, psychological, and social well-being have typically found three distinct factors (Gallagher et al. 2009; Keyes 2005, 2006; Keyes et al. 2008; Lamers et al. 2011). Furthermore, research has shown that hedonic and eudaimonic well-being have different correlates (Vittersø et al. 2009) and accumulate differently over time (Huta 2005).

Given their integration in one model of mental health, we believe that there is reason for different forms of well-being to be related to each other. However, these relationships are only moderate, and it is, therefore, also important to distinguish the

different forms. High levels of mental health demand high levels of all three forms of well-being: emotional, psychological, *and* social. Keyes and Annas (2009) have provided evidence that it is indeed important to have high levels of different forms of well-being in order to function optimally in other psychological, social, and biological domains.

The Two-Continua Model of Mental Health and Mental Illness

An important next question is how positive mental health relates to mental illness. Traditionally, mental illness and mental health were seen as the opposite poles of one dimension. Lower levels of mental illness would therefore be the same as higher levels of mental health, and vice versa. There is, however, increasing evidence that this model is not true. Rather, mental illness and mental health are distinct dimensions, even though they tend to be related. The two-continua model of mental illness and health holds that one continuum indicates the presence or absence of mental health and the other, the presence or absence of mental illness (Keyes 2005). Complete mental health is therefore best viewed as a complete state: not merely the absence of mental illness but also the presence of mental health.

Keyes (2005) studied the relation between mental health and mental illness using data from the study on Midlife Development in the United States (MIDUS), a representative survey of 3,032 American adults between the ages 25 and 74. The data provide strong support for the two-continua model: A confirmatory factor model with two related factors proved to be superior to the single-factor model and provided a nearly perfect fitting model to the MIDUS data (Keyes 2005). Recently, this model has also been replicated in US adolescents (ages 12–18; Keyes 2006), US college students (Keyes et al. 2012), Dutch adults (Lamers et al. 2011), and South African adults (Keyes et al. 2008). Using other measures of mental health and mental illness, other studies have come to similar conclusions (Compton et al. 1996; Greenspoon and Saklofske 2001; Headey et al. 1993; Masse et al. 1998; Suldo and Shaffer 2008).

Further evidence for the validity of the two-continua model is given by studies on the relations of mental health and mental illness with other criteria. Findings consistently show that adults and adolescents who are diagnosed as anything less than a state of complete mental health are functioning worse in terms of health-care utilization, work productivity, and psychosocial functioning (Keyes 2002, 2005, 2006, 2007).

The Social Distribution of Mental Health and Illness

To further validate the distinction between mental health and mental illness and between the different forms of well-being, we have analyzed the social distribution in the Dutch population. If mental illness and different components of mental health

have the same social distribution, one might argue that it is not much use to distinguish among them. Those with a higher risk for mental illness would be the same as those with a higher chance for positive mental health. Efforts toward the prevention and treatment of mental illness would thus be directed toward the same groups as efforts toward the promotion and protection of mental health. Similarly, it would not be necessary in public mental health care to distinguish between different components of mental health when the same adults who have a higher chance of experiencing emotional well-being also have a higher chance of experiencing psychological and social well-being. In contrast, when the pattern of social distribution differs between mental illness and mental health, as well as between the three components of mental health, this would lend further evidence to the importance of treating them as distinct. This would also have implications for public mental health care, as this would demand approaches which are more specifically targeted toward different aspects of mental illness and mental health in specific groups.

Previous studies have shown differentiated patterns of relations between mental illness and well-being with sociodemographic factors. With regard to mental illness, a recent large-scale Dutch study showed that disorders on Axis I of the DSM-IV (mood, anxiety, and substance disorders) have an uneven social distribution (De Graaf et al. 2010). Younger adults, those with lower educational levels, those without a partner, and those who are considered unemployed, have higher chances of experiencing any disorder during a 12-month period. No differences between men and women were found. Furthermore, studies have shown the mutual relations between physical and mental health (e.g., Moussavi et al. 2007; Prince et al. 2007).

Diener et al. (1999) reviewed the findings from many studies on emotional well-being. A higher education, being married, being employed, and being in good physical health related positively to emotional well-being, whereas gender tends to be unrelated to emotional well-being. The relation of age with emotional well-being depends on the measure used: Positive affects tend to be lower in older age groups, but life satisfaction tends to be equally high, or even higher, in older age groups.

Ryff and Singer (2008) describe the following pattern for psychological well-being. A higher education tends to go with higher levels of psychological well-being, in particular, personal growth and purpose in life. Women tend to score higher on positive relations than men, but there are few other gender differences in psychological well-being. Lastly, studies have shown that older adults score higher on autonomy and environmental mastery, lower on purpose in life and personal growth, and similar on self-acceptance and positive relations as younger adults. Similar results have been found in Canada (Clarke et al. 2001) and Sweden (Lindfors et al. 2006). There are few studies that relate psychological well-being to resources, such as employment or marriage, but one study has shown a complex relation of marital status and changes therein to psychological well-being (Marks and Lambert 1998). Last, chronic illness tends to be related to lower levels of psychological well-being (Mangelli et al. 2002), and there are studies showing that psychological well-being has various neurobiological correlates (Ryff and Singer 2006).

The social distribution of social well-being is least often studied, so we have to depend mainly on findings from the MIDUS study (Keyes 1998; Keyes and Shapiro 2004). A higher education is consistently related to higher social well-being, whereas poor physical health is consistently related to lower social well-being. Men tend to be higher on social coherence and women on social acceptance. Marriage is particularly related to a higher level of social integration. Age shows a complex pattern, with older adults having higher levels of social integration and acceptance and younger adults experiencing higher social coherence and contribution.

Usually, these sociodemographic factors explain, at best, 10% of the variance in well-being measures (Veenhoven 1996; Keyes and Shapiro 2004; Ryff and Singer 2008). Nevertheless, the existing findings show that sociodemographic factors hold different relations to different dimensions of mental illness and mental health. These findings support the idea that it is important to distinguish between mental illness and mental health as well as between the three components of positive mental health.

The Present Study

The present study contributes to the existing knowledge in three ways. First, few studies have addressed the three components of positive mental health simultaneously. Hence, it is difficult to know whether one's social position is related in a similar or different way to emotional, psychological, and social well-being. For example, gender tends to be related to some aspects of psychological and social well-being, but not to emotional well-being. However, we do not know whether gender is related in a *significantly* different way to these three forms of well-being. On the other hand, education is related to lower levels of emotional, psychological, and social well-being, but still, these relations may differ in strength. Our study can therefore contribute to the existing knowledge by including a measure for all three aspects of well-being and by investigating the relation of the three types of well-being with indicators of one's societal position (age, gender, and education) as well as with indicators of living conditions (marital status, employment, and physical health).

Second, this chapter provides further validation of the two-continua model, by analyzing the relationship of mental health and mental illness with sociodemographic variables. Although there have been many epidemiological studies addressing mental illness, there is still a lack of knowledge about the social distribution of mental health. Most importantly, it is still unknown whether the relation of mental health to sociodemographical variables differs from the relation of mental illness to these variables.

Lastly, few studies addressed the social distribution of mental health and mental illness over time. In our study, we followed the participant over 9 months, measuring their mental health and mental illness four times, with intervals of 3 months. This makes it possible to address whether the relation of sociodemographics to the three components of mental health and mental illness is stable over time.

Method

Procedures and Sample

In this chapter, data from the LISS panel of CentERdata are used. The LISS panel (Longitudinal Internet Study in the Social sciences) comprises Dutch-speaking noninstitutionalized individuals from 5,000 households in the Netherlands. Members answer Internet-based questionnaires on a monthly basis. Participants who did not have a computer or Internet were provided with the necessary means to cooperate in the study.

A *module on mental health and mental illness* (MMHMI; Westerhof and Keyes 2008) was presented to one person per household in one-third of the households at four points in time (December 2007 and March, June, and September 2008). This subsample was stratified according to age (18–29, 30–49, 50–64, 65+ years), gender, and migratory status (being Dutch versus being born abroad, or having at least one parent born abroad). This procedure resulted in a sample of 1,662 respondents who filled out the questionnaire in December 2007 (a response of 76% of those who were asked to participate in the panel). To gather additional information on the physical health of the respondents, we used a core module on health issues administered in November 2007 ($N = 1{,}340$; 80.6%). These 1,340 respondents served as our baseline for the analyses in this chapter. Of those 1,340 participants, 1,220 filled out the MMHMI in March 2008 (91.0%), 946 in June 2008 (70.6%), and 1,086 in September 2008 (81.0%). Almost two-thirds of the respondents ($N = 850$; 63.4%) filled out the questionnaires at all four measurement points. A logistic regression analysis showed that all variables used in this chapter (age, gender, migratory status, educational status, marital status, employment status, physical health, psychopathology, and emotional, psychological, and social well-being) explained only 2% of the variance between respondents who did or did not complete all measurements. Those who completed all four measures were somewhat less likely to be married ($\text{Exp}(B) = .751$; $p = .020$) or employed ($\text{Exp}(B) = .671$; $p = .002$) than those who did not.

To replace the missing data of those who did not complete the MMHMI at a given point in time, we carried out a regression analysis of that measurement at the previous point in time for those who did have complete data. We used the resulting regression equation to replace the missing values for those who did not complete the MMHMI at the corresponding point in time. In this way, we could analyze data for all 1,340 participants of our baseline sample.

Some basic characteristics of the sample are presented in Table 3.1. The age of the respondents varied between 18 and 85 (Mean = 48.32 years; SD = 17.66). Half of the sample was female. Fourteen percent were born abroad or had at least one parent born abroad. About one-third of them came from Western countries and two-thirds from non-Western countries. One-third had 10 years of education or less. Somewhat more than half of them were married, and half of them had paid work.

Instruments

The *Brief Symptom Inventory* (BSI; Derogatis 1975), one of the most often used instruments in mental health care, was used for assessment of psychopathology. The BSI consists of 53 items on symptoms of psychopathology, to be rated on a 5-point Likert scale (*not at all–a lot*) to the degree to which the respondent experienced these symptoms in the past week. The BSI measures somatization, obsessive-compulsive complaints, interpersonal sensitivity (social phobia), depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Examples are "During the past 7 days, how much were you distressed by nervousness and shakiness inside?" and "During the past 7 days, how much were you distressed by feeling afraid to travel on buses, subways, or trains?" The Dutch translation has recently been validated (de Beurs and Zitman 2006). The reliability of the total scale in the present sample at baseline is .95 (Cronbach alpha). We computed the mean total score on the BSI, with higher scores indicating more psychopathology.

The *Mental Health Continuum – Short Form* (MHC-SF; Keyes et al. 2008; Lamers et al. 2011; Westerhof and Keyes 2008) consists of 14 items which correspond to our theoretical formulation of emotional, psychological, and social well-being. This innovative instrument was derived from the Mental Health Continuum – Long Form, which consists of longer scales measuring the three types of well-being. Sample items for the three types of well-being are "[i]n the past month, how often did you feel: happy; that your life has a sense of direction or meaning to it; that people are basically good?" There were six answering categories ranging from *almost never* to *every day*. The MHC-SF was translated into Dutch and back into English and subsequently used in four pilot studies. These pilot studies gave reason to reformulate some Dutch items. The final version was used in the LISS sample. Confirmatory factor analysis showed that the scale was empirically made up of three theoretical scales on emotional, psychological, and social well-being (Lamers et al. 2011). The internal consistency (Cronbach alpha) for the three scales at the baseline measurement in December 2007 was .83 for emotional well-being, .83 for psychological well-being, and .74 for social well-being. The scales also proved to have good concurrent and discriminatory validity (Lamers et al. 2011). Lastly, an analysis of the four measurement points based on item response theory showed that there is no substantial differential item functioning across sociodemographic variables, physical and mental illness, or time. Hence, the items are interpreted in a similar way by people from various backgrounds in Dutch society at different points in time (Lamers et al. 2012). We computed mean scores for emotional, psychological, and social well-being with higher scores indicating higher levels of well-being.

Background variables included age, gender, migration status, educational level, marital status, and employment status. Furthermore, we computed a composite index for physical health. We used three measures from the core module on health, developed for the LISS panel: number of physical conditions, number of limitations in activities of daily living, and subjective health. The number of physical conditions was measured with a checklist, asking whether a physician had told the

Table 3.1 Major characteristics of the respondents ($N = 1{,}340$)

		Percent
Gender	Female	50.0
	Male	50.0
Migrant	No	86.0
	Yes, Western country	5.0
	Yes, non-Western country	9.0
Education	Max. 10 years	32.1
	11–14 years	35.7
	15 or more years	32.3
Marital status	Married	54.3
	Divorced	9.3
	Widowed	6.3
	Never married	30.1
Employment status	Paid work	50.7
	Unemployed	1.9
	Disabled	2.8
	School or study	7.2
	Retired	23.5
	Household	10.5
	Other	3.5

respondent during the last year that the respondent had suffered from any of 18 possible physical conditions (Mean = 0.79; SD = 1.31). Limitations in basic and instrumental activities of daily living were measured as the mean on 23 activities (from 1 = *without problems* to 4 = *only with help from others*; Mean = 1.16; SD = 0.26). Subjective health was measured with a single question asking how respondents rate their present health (1 = *bad* to 5 = *excellent*; Mean = 3.13; SD = 0.76). We carried out a factor analysis on subjective health, number of physical conditions, and number of limitations and saved the factor score as an overall measure of physical health (Mean = 0.0; SD = 1.0).

Analyses

We first carried out a MANOVA for repeated measures. The seven independent variables were age, gender, migratory status (*Dutch origin* = 0, *other* = 1), educational attainment (six categories as in Table 3.1), marital status (*married* = 1, *not married* = 0), employment status (*paid work* = 1, *other* = 0), and physical health (the composite index described above). The scores on the BSI and the three subscales of the MHC-SF at the four measurement points made up the 16 repeated measures. The scores on the BSI were reversed in this analysis so that they indicated more absence of mental illness and carried a similar meaning to that of the mental health scales. The 16 repeated measures were divided over two factors with four levels each: The first factor was called *scales* and concerned the four different dimensions

of mental illness and mental health (absence of psychopathology and presence of emotional well-being, psychological well-being, and social well-being), and the second factor was called *time* and concerned the four measurement points (December 2007 and March, June, and September 2008). We used Helmert contrasts to make comparisons between the scales: Psychopathology was compared to all other scales, emotional well-being to both eudaimonic well-being measures, and psychological to social well-being. We used repeated contrasts for the second factor (time), comparing each time point to the previous time point. After examining the results of this MANOVA, we further analyzed the data with four ordinary least-squares regression analyses to assess the relation between sociodemographics and the four indicators of mental illness and mental health. Last, for those results which differed over time, we carried out post hoc paired t-tests to assess which time differences were significant.

Results

Table 3.2 presents the basic findings for mental illness and mental health across the four points in time. We carried out the MANOVA with repeated measures to analyze this pattern of findings and to find out whether the background variables had any effect on it. When looking at the multivariate tests, we found that the factor scales was significant ($F_{3,1330} = 47.60$; $p < .001$). That is to say, the mean scores on the different scales differ from each other, independent of the time of measurement. The Helmert contrasts were all significant ($p < .001$). The absence of psychopathology differs significantly from the presence of mental health, but this is a result of the different answering scales used (a four-point format for psychopathology and a six-point format for mental health). It can be seen in Table 3.2 that the sample scored rather low on psychopathology: approximately 0.35 on a scale from 0 to 3. More interesting is the finding that the means of emotional, psychological, and social well-being differed from each other. On the mental health measure, participants scored highest on emotional well-being, followed by psychological well-being, and lowest on social well-being (Table 3.2). The factor time is not significant ($F_{3,1330} = 0.78$; $p = .506$), nor is the interaction between scales and time ($F_{9,1324} = 1.59$; $p = .113$). As can be seen in Table 3.2, the means are remarkably stable across time and so are the differences between the scales.

How is this pattern qualified by the background variables? First, all background variables (age, gender, migratory status, educational attainment, being married, having paid work, and being in good physical health; all $p < .05$) showed a significant interaction with the factor scales. Hence, the predictive value of each of these variables was different for the four scales used. We will analyze these differences in more detail below. Furthermore, none of the interactions between the factor time and the background variables were significant (all $p > .05$). The stability in time observed in Table 3.2 is therefore similar for all characteristics of the participants considered here. However, age showed a significant three-way interaction with scales and time ($F_{9,1324} = 2.54$; $p = .007$). A similar finding pertains to education

Table 3.2 Frequency distribution of measures of mental illness and health across time ($N = 1{,}340$)

		*T*0	*T*1	*T*2	*T*3	All
Mental illness	Mean	.37	.35	.34	.34	.35
	SD	.34	.33	.32	.32	.30
Mental health						
Emotional well-being	Mean	4.68	4.66	4.56	4.61	4.63
	SD	.93	.94	.92	.87	.77
Psychological well-being	Mean	4.17	4.20	4.12	4.16	4.16
	SD	.98	.97	.92	.95	.81
Social well-being	Mean	3.32	3.31	3.33	3.41	3.50
	SD	1.00	1.01	.94	.93	.78

Table 3.3 Ordinary least-squares regression of mental illness and mental health on background variables ($N = 1{,}340$)

	Mental illness	Emotional well-being	Psychological well-being	Social well-being
	Beta	Beta	Beta	Beta
Age	−.28***	.08*	−.12***	−.01
Gender: female	.01	.07*	.07*	.00
Migration: yes	.06*	−.05	.02	.04
Education	−.03	−.01	.07*	.06*
Married: yes	−.07*	.12***	.01	−.02
Employed: yes	−.07*	−.03	.05	.02
Physical health	−.41***	.27***	.12***	.15***
Adjusted R^2	.19	.08	.06	.03

*p<.05;

***p<.001

($F_{9,1324} = 2.53$; $p = .007$). These findings indicate that participants with a different age and those with a different educational background show a somewhat different pattern across time on some scales than other scales. We will also analyze these differences in more detail below.

To further analyze the relations of the different background variables with mental illness and mental health, we carried out a regression analysis for each of the four dimensions of mental illness and mental health. We used the mean score of each dimension across the four time points as the dependent variable and age, gender, migration, education, marital status, employment status, and physical health as the independent variables. The results are presented in Table 3.3.

It can be seen that age, migration, marital status, employment status, and physical health were related to mental illness: Being young, being a migrant, not being married or employed, and having poor physical health were all related to more mental illness complaints. Together, these variables account for 19% of the explained variance in mental illness. Emotional well-being was related to age, gender, marital status, and physical health: Being older, being female, being married, and having a better physical health were related to better emotional well-being. These variables account for 8% of the variance in emotional well-being. Six percent of the variance

of psychological well-being can be explained by age, gender, education, and physical health: A younger age, being female, higher educational achievement, and good physical health were related to better psychological well-being. Finally, the variables explain 3% of the variance in social well-being: Higher educational achievement and good physical health were related to higher social well-being. To conclude, the mean score across time for each dimension of mental illness and mental health was differently related to different background variables.

The within-subjects contrasts in the MANOVA with repeated measures give some more information with regard to the different relations of the background variables with mental illness and mental health. It can be seen in Table 3.3 that an older age was related to less mental illness problems and higher emotional and lower psychological well-being, but it was unrelated to social well-being. All three Helmert contrasts were significant for age. That is to say that the relation of age to mental illness differed from that of mental health, the relation of age to emotional well-being differed from the relation to eudaimonic well-being, and the relation of age to psychological well-being differed from that of social well-being. Being female was related to more emotional and psychological well-being, but not to social well-being and mental illness. The Helmert contrasts were only significant for the comparison between psychological and social well-being. For the other variables, only the Helmert contrast between emotional and eudaimonic well-being was significant. It can be seen that being a migrant and being employed were negatively related to emotional well-being, but positively to psychological and social well-being. Furthermore, higher education was related to more psychological and social well-being, but not to emotional well-being. Being married was related to more emotional well-being, but not to both measures of eudaimonic well-being. Lastly, good physical health was more strongly related to emotional than to psychological and social well-being.

Two three-way interactions were significant: age by scales and time as well as education by scales and time. We carried out post hoc t-tests in order to compare the changes between any two adjacent points in time per scale and age/education group. Figure 3.1 presents the findings for three age groups: a younger group between 18 and 39 years, a middle-aged group between 40 and 59 years, and an older group aged 60 years and over. The scores for mental health range from 1 to 6, those for mental illness from 0 to 3. Straight lines refer to scores on mental illness, dotted lines to mental health. The thicker lines refer to two adjacent means, which were significantly different in the post-hoc paired *t*-test. It can be seen that the two younger groups (18–39 and 40–50 years) had somewhat less mental illness complaints at the second than the first time of measurement (*T*0 and *T*1). Between *T*1 and *T*2, we found a significant drop in mental illness complaints and an increase in emotional well-being. Furthermore, the youngest group decreased in emotional but increased in social well-being, whereas the middle age group showed a decrease in psychological well-being. Finally, the oldest age group showed an increase in social well-being and the two youngest groups in emotional well-being. It can be concluded that mental illness and mental health have a somewhat different longitudinal pattern for different age groups. Most important, however, is the finding that a change in one dimension does not always go together with changes in other dimensions.

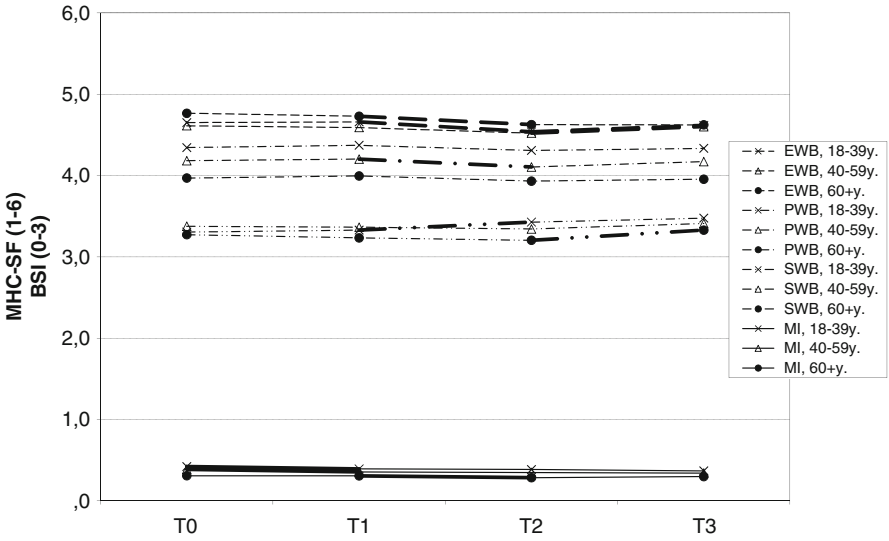

Fig. 3.1 Mean of mental illness and mental health across time for three different age groups. *EWB* emotional well-being, *PWB* psychological well-being, *SWB* social well-being, *MI* mental illness, *MHC-SF* Mental Health Continuum – Short Form, *BSI* Brief Symptom Inventory

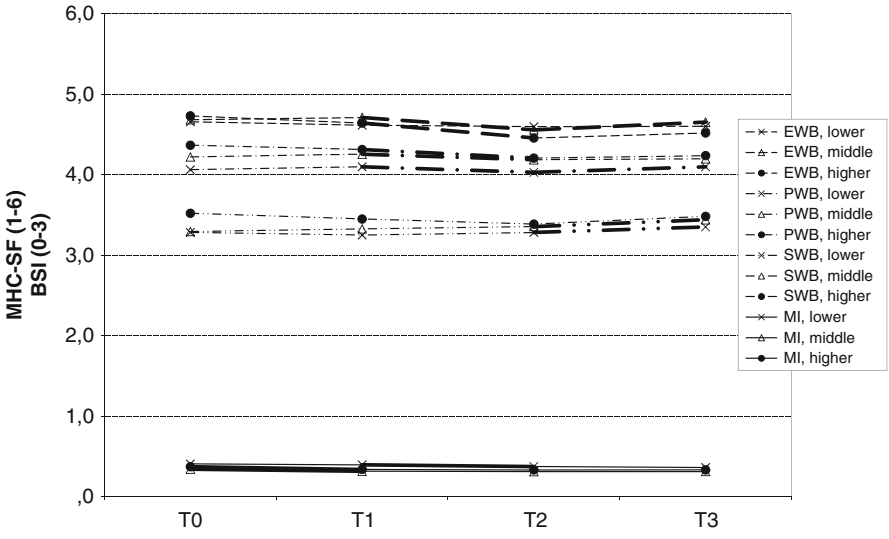

Fig. 3.2 Mean of mental illness and mental health across time for three different educational groups. *EWB* emotional well-being, *PWB* psychological well-being, *SWB* social well-being, *MI* mental illness, *MHC-SF* Mental Health Continuum – Short Form, *BSI* Brief Symptom Inventory

Figure 3.2 presents the findings for three educational groups: lower educated (10 years or less), middle (11–14 years), and higher (15 years and more). There was a decrease in mental illness between the first and second measurement for the

middle- and higher educated groups. The lowest educated group showed a significant decrease in mental illness problems 3 months later. Furthermore, all groups declined in psychological well-being, but only the two highest educated groups also declined in emotional well-being. Between *T*2 and *T*3, there was a significant increase in well-being: The lowest educated group rose in social and psychological well-being, and the middle group in social and emotional well-being. It can be concluded that mental illness and mental health have a somewhat different longitudinal pattern for different educational groups. Most important, again, is the finding that a change in one dimension does not always go together with changes in other dimensions. These findings therefore provide further evidence for the distinction between the different measures of mental illness and mental health.

Conclusion

The promotion and protection of mental health are new goals in public mental health care, which has traditionally been focused on the treatment and prevention of mental illness. In line with the basic definition of positive mental health given by the WHO (2004), we argued that mental health consists of the experience of emotional well-being in combination with the experience of personal and social fulfillment. In this chapter, we provided important information about the social distribution of mental illness and different components of mental health in the Dutch population. The three most important findings are (1) that sociodemographic variables hold different relations with different indicators of mental illness and mental health, (2) that these relations are remarkably stable across time, and (3) that the exceptions to this stability for age and educational level showed distinct time trajectories for the different indicators of mental health and illness. Taken together, these findings show that it is important to distinguish among the three different components of mental health, i.e., emotional, psychological, and social well-being. Furthermore, the findings provide further support for the two-continua model of mental health and illness.

In the following two paragraphs, we will interpret the findings in relation to previous studies on mental illness and different aspects of well-being. We found that younger adults, migrants, unmarried or unemployed persons, and those with poor physical health experienced more mental illness complaints. These findings generally match the findings from the studies discussed in the introduction, with the exception that we found no relation between education and mental illness. However, post hoc analyses showed that there is a bivariate relation of lower education with mental illness, but this relation is mediated by the poorer physical health condition of those with lower educational levels.

We also found that emotional well-being is better among older adults, women, married persons, and those with good physical health. In contrast to the studies mentioned in the introduction, we found no relations of educational attainment or unemployment to emotional well-being. These lacking correlations might be specific for Dutch society, which is more egalitarian and has a stronger social security net

than the United States, where most studies have been carried out. Furthermore, we found a difference between men and women which was not always found in previous studies; however, this finding appears to be the result of a suppression effect of the poorer health condition of women. Psychological well-being is explained by a lower age, being female, and having higher education and good physical health. Previous studies have shown somewhat differentiated patterns for age and gender, but these did not examine psychological well-being in total. Apparently, the differentiated patterns account for small differences in the advantage of younger adults and women. Education and physical health were related to psychological well-being in previous studies as well. Social well-being is explained only by higher education and better physical health. These were the two strongest predictors of social well-being in previous studies as well.

Our study added to the existing knowledge as we were also able to compare the ways in which sociodemographic variables are related to the different indicators of mental illness and health. Physical health was the only predictor that was significantly related to mental illness as well as to all three well-being measures. Even physical health showed a differentiated pattern across the four indicators: It was more strongly related to mental illness than to emotional well-being and more strongly to emotional well-being than to psychological and social well-being. The stronger relation with mental illness might be explained by the fact that the mental illness measure also contains a somatization subscale including items with psychophysiological symptoms, such as pain and breathing difficulties. By contrast, age has the most contradictory pattern: Older adults experience less mental illness problems, more emotional well-being, less psychological well-being, but equal levels of social well-being as younger adults. This pattern might be related to better emotion regulation capacities of older adults, yet a lack of societal possibilities for self-realization or societal participation (cf. Westerhof and Keyes 2010). Marriage is related to less mental illness problems and higher well-being but not to both forms of eudaimonic well-being, whereas the opposite is true for education. Apparently, marriage does not help in individual and social fulfillment, whereas a better education is an important resource for fulfillment. Education might not be related to emotional regulation, whereas marriage is an important resource there.

It is interesting to see that the relations of sociodemographic background with mental illness and health are remarkably stable across time. We only found some differential time trajectories for age and education, contributing to our knowledge about the relative independence of the indicators for mental illness and health used here. Further studies should clarify which aspects of mental illness and mental health change and under what conditions. One might think of critical life events here, but also of far-reaching societal changes, such as the recent economic recession which came just after our survey concluded. The present study also suggests that for certain age and educational groups, changes in mental illness precede later changes in well-being. Further studies should clarify whether and how mental illness and mental health influence each other across time. For example, Keyes et al. (2010a) found that mental health is an important predictor of mental illness 10 years later in time.

Even though measures were taken to provide underprivileged groups with a computer and Internet access in order to participate in the LISS panel, certain groups remained underrepresented in the panel. Compared with national statistics, the LISS panel shows some underrepresentation of older adults, single, never married persons, widowers, and immigrants (Knoef and de Vos 2009). Furthermore, not all participants were equally conscientious in filling out all questionnaires every month. However, this did not lead to a substantial distortion in the variables used in this chapter. Finally, sociodemographic status explained only some of the variance in mental illness and mental health. As noted in the introduction, this is known from other studies as well. It is therefore important to search for other explanations of individual differences, such as genetics (Keyes et al. 2010b), personality (Joshanloo and Nosratabadi 2009), and psychological processes, such as coping or psychological flexibility (Fledderus et al. 2010).

Despite these limitations, we can conclude that mental health is more than the absence of mental illness. Given the differential relations of background characteristics to mental health and illness, public mental health care is best served by a differentiated approach in the treatment and prevention of mental illness, as well as by the promotion and protection of mental health. Such a differentiated approach should be tailored to groups with different backgrounds.

References

Andrews, F. M., & Withey, S. B. (1976). *Social indicators of well-being: Americans' perceptions of life quality*. New York: Plenum.

Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago: Aldine.

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The quality of American life: Perceptions, evaluations and satisfactions*. New York: Russell Sage.

Cantril, H. (1965). *The pattern of human concerns*. New Brunswick: Rutgers University Press.

Clarke, P., Marshall, V., Ryff, C., & Wheaton, B. (2001). Measuring psychological well-being in the Canadian study of health and aging. *International Psychogeriatrics, 13*, 79–90.

Compton, W. C., Smith, M. L., Cornish, K. A., & Qualls, D. L. (1996). Factor structure of mental health measures. *Journal of Personality and Social Psychology, 76*, 406–413.

De Beurs, E., & Zitman, F. (2006). De Brief Symptom Inventory (BSI): De betrouwbaarheid en validiteit van een handzaam alternatief. [Reliability and validity of a practical alternative to the SCL 90]. *Maandblad Geestelijke Volksgezondheid*, *61*, 120–141.

De Graaf, R., ten Have, M., & van Dorsselaer, S. (2010). *De psychische gezondheid van de Nederlandse bevolking: NEMESIS-2, Opzet en eerste resultaten*. Utrecht: Trimbos.

Deci, E., & Ryan, R. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies, 9*, 1–11.

Derogatis, L. R. (1975). The brief symptom inventory. Baltimore, MD:Clinical Psychometric Research.

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*, 542–575.

Diener, E., Suh, E. M., Lucas, R., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin, 125*, 276–302.

Fledderus, M., Bohlmeijer, E. T., Smit, F., & Westerhof, G. J. (2010). Mental health promotion as a new goal in public mental health care: A randomized controlled trial of an intervention enhancing psychological flexibility. *American Journal of Public Health, 100*, 2372–2378.

Gallagher, M., Lopez, S., & Preacher, K. (2009). The hierarchical structure of well-being. *Journal of Personality, 77*, 1025–1050.
Greenspoon, P. J., & Saklofske, D. H. (2001). Toward an integration of subjective well-being and psychopathology. *Social Indicators Research, 54*, 81–108.
Gurin, G., Veroff, J., & Feld, S. (1960). *Americans view their mental health*. New York: Basic Books.
Headey, B., Kelley, J., & Wearing, A. (1993). Dimensions of mental health: Life satisfaction, positive affect, anxiety, and depression. *Social Indicators Research, 29*, 63–82.
Huta, V. (2005). *Pursuing pleasure versus growth and excellence: Links with different aspects of well-being*. Dissertation, McGill University, Montreal.
Joshanloo, M., & Nosratabadi, M. (2009). Levels of mental health continuum and personality traits. *Social Indicators Research, 90*, 211–224.
Kafka, G., & Kozma, A. (2002). The construct validity of Ryff's Scales of Psychological Well-Being (SPWB) and their relationship to measures of subjective well-being. *Social Indicators Research, 57*, 171–190.
Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *Journal of Positive Psychology, 3*, 219–233.
Keyes, C. L. M. (1998). Social well–being. *Social Psychology Quarterly, 61*, 121–140.
Keyes, C. L. M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of Health and Social Behavior, 43*, 207–222.
Keyes, C. L. M. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology, 73*, 539–548.
Keyes, C. L. M. (2006). Mental health in adolescence: Is America's youth flourishing? *American Journal of Orthopsychiatry, 76*, 395–402.
Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing: A complementary strategy for improving national mental health. *American Psychologist, 62*, 95–108.
Keyes, C. L. M., & Annas, J. (2009). Feeling good and functioning well: Distinctive concepts in ancient philosophy and contemporary science. *Journal of Positive Psychology, 4*, 197–201.
Keyes, C. L. M., & Shapiro, A. D. (2004). Social well-being in the United States: A descriptive epidemiology. In O. G. Brim, C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we: A national study of well-being at midlife* (pp. 350–373). Chicago: University of Chicago Press.
Keyes, C. L. M., Shmotkin, D., & Ryff, C. D. (2002). Optimizing well-being: The empirical encounter of two traditions. *Journal of Personality and Social Psychology, 82*, 1007–1022.
Keyes, C. L. M., Wissing, M., Potgieter, J., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the Mental Health Continuum – Short Form (MHC-SF) in Setswana-speaking South Africans. *Clinical Psychology and Psychotherapy, 15*, 181–192.
Keyes, C. L. M., Dhingra, S. S., & Simoes, E. J. (2010a). Change in level of positive mental health as a predictor of future risk of mental illness. *American Journal of Public Health, 100*, 2366–2371.
Keyes, C. L. M., Myers, J. M., & Kendler, K. S. (2010b). The structure of the genetic and environmental influences on mental well-being. *American Journal of Public Health, 100*, 2379–2384.
Keyes, C. L. M., Eisenberg, D., Perry, G. S., Dube, S. R., Kroenke, K., & Dhingra, S. S. (2012). The relationship of level of positive mental health with current mental disorders in predicting suicidal behavior and academic impairment in college students. *Journal of American College Health, 60*(2), 126–133.
King, L. A., & Napa, C. (1998). What makes a life good? *Journal of Personality and Social Psychology, 75*, 156–165.
Knoef, M., & Vos, K. de. (2009). *The representativeness of LISS, an online probability panel*. Retrieved August 31, 2012, from https://www.lisspanel.nl/assets/uploaded/representativeness_LISS_panel.pdf
Lamers, S. M. A., Westerhof, G. J., Bohlmeijer, E. T., ten Klooster, P. M., & Keyes, C. L. M. (2011). The psychometric properties of the Mental Health Continuum-Short Form (MHC- SF) in the Dutch population. *Journal of Clinical Psychology, 67*, 99–110.

Lamers, S. M. A., Glas, C. A. W., Westerhof, G. J., & Bohlmeijer, E. T. (2012, online first). Longitudinal evaluation of the Mental Health Continuum-Short Form (MHC-SF): Item functioning across demographics, physical illness and mental illness. *European Journal of Psychological Assessment*. doi:10.1027/1015-5759/a000109

Lindfors, P., Berntsson, L., & Lundberg, U. (2006). Factor structure of Ryff's psychological well-being scales in Swedish female and male white-collar workers. *Personality and Individual Differences, 40*, 1213–1222.

Maddux, J. (2009). Stopping the 'madness': Positive psychology and deconstructing the illness ideology and the DSM. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (2nd ed., pp. 61–69). New York: Oxford University Press.

Mangelli, L., Gribbin, N., Büchi, S., Allard, S., & Sensky, T. (2002). Psychological well-being in rheumatoid arthritis: Relationship to 'disease' variables and affective disturbance. *Psychotherapy and Psychosomatics, 71*(2), 112–116.

Marks, N. F., & Lambert, J. D. (1998). Marital status continuity and change among young and midlife adults: Longitudinal effects on psychological wellbeing. *Journal of Family Issues, 19*, 652–686.

Masse, R., Poulin, C., Dassa, C., Lambert, J., Belair, S., & Battaglini, A. (1998). The structure of mental health higher-order confirmatory factor analyses of psychological distress and wellbeing measures. *Social Indicators Research, 45*, 475–504.

McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology, 74*, 494–512.

Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic diseases, and decrements in health: Results from the World Health Surveys. *Lancet, 370*, 851–858.

Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M. R., et al. (2007). No health without mental health. *Lancet, 370*, 859–877.

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141–166.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*, 1069–1081.

Ryff, C. D., & Essex, M. J. (1991). Psychological well-being in adulthood and old age: Descriptive markers and explanatory processes. *Annual Review of Gerontology and Geriatrics, 10*, 144–171.

Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727.

Ryff, C. D., & Singer, B. (2006). Best news yet on the six-factor model of well-being. *Social Science Research, 35*, 1103–1119.

Ryff, C. D., & Singer, B. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies, 9*, 13–39.

Suldo, S. M., & Shaffer, E. J. (2008). Looking beyond psychopathology: The dual-factor model of mental health in youth. *School Psychology Review, 37*, 52–68.

Vaillant, G. E. (2003). Mental health. *American Journal of Psychiatry, 169*, 1373–1384.

Veenhoven, R. (1996). Developments in satisfaction research. *Social Indicators Research, 37*, 1–46.

Vittersø, J., Oelmann, H., & Wang, A. (2009). Life satisfaction is not a balanced estimator of the good life: Evidence from reaction time measures and self-reported emotions. *Journal of Happiness Studies, 10*, 1–17.

Waterman, A. (1990). The relevance of Aristotle's conception of eudaimonia for the psychological study of happiness. *Theoretical & Philosophical Psychology, 10*(1), 39–44.

Waterman, A. (1993). Two conceptions of happiness: Contrasts of personal expressiveness (eudaimonia) and hedonic enjoyment. *Journal of Personality and Social Psychology, 64*, 678–691.

Waterman, A. (2008). Reconsidering happiness: A eudaimonist's perspective. *The Journal of Positive Psychology, 3*(4), 234–252.

Waterman, A. S., Schwartz, S. J., & Conti, R. (2008). The implications of two conceptions of happiness (hedonic enjoyment and eudaimonia) for the understanding of intrinsic motivation. *Journal of Happiness Studies, 9*, 41–79.

Westerhof, G. J., & Keyes, C. L. M. (2008). Geestelijke gezondheid is meer dan de afwezigheid van geestelijke ziekte. *Maandblad Geestelijke Volksgezondheid, 63*, 808–820.

Westerhof, G. J., & Keyes, C. L. M. (2010). Mental illness and mental health: The two continua model across the lifespan. *Journal of Adult Development, 17*, 110–119.

World Health Organization. (2004). *Promoting mental health: Concepts, emerging evidence, practice* (Summary report). Geneva: WHO.