Qual Life Res (2015) 24:1645–1651
DOI 10.1007/s11136-014-0889-z

COMMENTARY

Integrating positive psychology into health-related quality of life research

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Accepted: 5 December 2014 / Published online: 14 December 2014

Abstract
Purpose Positive psychology is an increasingly influential force in theory and research within psychology and many related fields, including behavioral medicine, sociology, and public health. This article aims to review the ways in which positive psychology and health-related quality of life (HRQOL) research currently interface and to suggest fruitful future directions.
Methods This article reviews the basic elements of positive psychology and provides an overview of conceptual and empirical links between positive psychology and HRQOL. The role of one central aspect of positive psychology (meaning) within HRQOL is highlighted, and unresolved issues (e.g., lack of definitional clarity) are discussed.
Results Some research on HRQOL has taken a positive psychology perspective, demonstrating the usefulness of taking a positive psychology approach. However, many areas await integration.
Conclusions Once conceptual and methodological issues are resolved, positive psychology may profitably inform many aspects of HRQOL research and, perhaps, clinical interventions to promote HRQOL as well.

Keywords Positive psychology · Health-related quality of life · Meaning in life

Positive psychology as a distinct subdomain of psychology was originally staked out by Martin Seligman in 1998 [1]. In a subsequent landmark paper, Seligman and Csikszentmihalyi [2] exhorted psychologists to broaden their vision from "preoccupation only with repairing the worst things in life to also building positive qualities." (p. 6). They defined positive psychology as using psychological theory, research, and intervention techniques to understand the positive, adaptive, creative, and emotionally fulfilling aspects of human behavior [2]. More recent definitions of positive psychology emphasize "the scientific study of optimal human functioning" [3] and "the scientific study of the qualities and conditions that permit humans to live a life worthwhile" [4].

Although Seligman originally focused explicitly on happiness, his more recent formulation reaches beyond "happiness" to the broader concept of "well-being," which he terms "flourishing" [5]. According to Seligman's recent formulation of positive psychology, well-being (i.e., flourishing) arises from successful pursuit of five endeavors or pillars: Positive emotions, Engagement, Relationships, Meaning, and Achievement [5]; see Fig. 1]. Together, these five pursuits comprise his PERMA model. Positive emotions involve feeling good, happy, and satisfied; specific positive emotions include pleasure, rapture, ecstasy, warmth, and comfort. Engagement involves being completely absorbed in activities, experiencing the sense of flow [6]. Relationships in Seligman's PERMA model [5] refer to being authentically connected to other people. Meaning involves a sense that one's existence is purposeful; although meaning is often framed within religion or spirituality, it does not have to be [7]. Achievement in the PERMA model refers to a sense of accomplishment and success in one's pursuits.

Seligman proposed that each element contributes to well-being; each is defined and measured independently of the others. According to Seligman, these five elements are "the best approximation of what humans pursue *for their*

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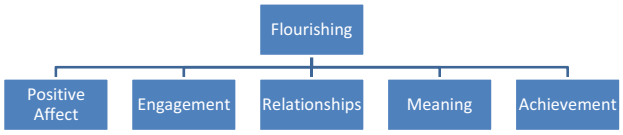

Fig. 1 Seligman's [5] model of flourishing

own sake" [5, p. 97]. Seligman argues that one's perception of the extent to which he or she experiences these five PERMA pillars determines his or her sense of flourishing [5].

While the PERMA model is the predominant model within positive psychology, with an explicit focus on the experience of a "good life," happiness or flourishing, other leading positive psychologists have highlighted highlights many other positive constructs, such as hope, optimism, gratitude, character strengths, transcendence, empathy, and altruism (see [8] for an overview). For example, Fredrickson [9] has promoted the broaden-and-build theory of positive emotions, while others have proposed the utility of exploring to distinct aspects of well-being, eudaimonic (meaningful), and hedonic (pleasurable) [e.g., 10, 11].

Positive psychology is increasingly influential within psychology and many related fields, including behavioral medicine, sociology, and public health, but remains relatively unintegrated into the extensive volume of research being conducted on health-related quality of life (HRQOL). In this article, I describe how positive psychology and HRQOL research currently interface, highlight the role of one central aspect of positive psychology (meaning) within HRQOL, and address some of the unresolved conceptual issues in integrating positive psychology into quality of life research.

Current integration of positive psychology and HRQOL

In recent years, some HRQOL researchers have been influenced by the positive psychology zeitgeist. For example, each of the PERMA pillars proposed by Seligman [5] has been a focus of research in the context of HRQOL, although some have as yet received relatively little empirical attention, while others have garnered much more. Copious research has linked *positive emotions* with HRQOL and other aspects of physical health (see [12] for a review). Few studies have examined how *engagement* relates to HRQOL [e.g., 13], but a vast body of research links aspects of *positive relationships*, such as satisfaction and social support, with HRQOL [e.g., 14].

Meaning has been a perennial topic of interest to researchers, particularly humanistic and existential psychologists, but has only recently been examined in the context of physical health and HRQOL. Because meaning is so central to positive psychology and underlies the other pillars (i.e., the impact of relationships and achievement are based on their significance to the individual and positive emotions and engagement lead to flourishing only in the context of meaningful pursuits; [15]), I focus on research linking meaning in life with health and HRQOL in the next section to illustrate the ways in which positive psychology might profitably inform many aspects of HRQOL research. The last pillar of PERMA, *achievement*, has received little explicit research attention in the context of HRQOL, but related topics such as work productivity have been studied in this context [e.g., 16]. Further, achievement is strongly linked with purpose and pursuit of important goals, which are elements of meaning in life, as will be discussed below. In addition to the linkages between the core PERMA pillars and HRQOL, others have linked HRQOL to positive psychology constructs such as altruism [17], optimism [18], and gratitude [19]. For example, in research conducted in a variety of populations, Schwartz et al. have found that altruistic behaviors appear to have a positive impact on mental health in both genders and on physical health in females [see 17 for a review].

Flourishing and the centrality of meaning

As noted above, some psychologists have proposed that meaning in life is central to flourishing; to live well and with quality, it is essential that people feel that their lives matter are understandable and have a transcendent purpose or mission [7, 20]. Meaning in life refers to a sense of comprehensibility, significance, and purpose [21–23]. Many definitions of meaning in life have been proposed; although differing in particulars, these definitions converge on the notion that meaning in life involves cognitive, motivational, and evaluative/emotional components [20].

The cognitive component of meaning in life involves a sense of coherence or comprehension of the world and one's place in it [20]. The motivational component refers to a sense of purpose or goal directedness. People have overarching goals or missions (implicit or explicit) by which they organize their lives; the extent to which they perceive themselves as living in alignment with and making progress toward their overarching goals through their daily experiences contributes to a sense of meaning in life. Finally, meaning in life has an evaluative/emotional component in terms of perceiving that one's life matters and is somehow significant in the broader scheme of the universe [24]. Thus, meaning in life encompasses a sense of comprehension, purpose, and mattering [25]. Meaning in life is often, but not always, closely linked with spirituality [5, 7].

Meaning in life and HRQOL

Myriad studies have reported that a higher sense of meaning in life is associated with higher levels of physical and mental health and HRQOL. For example, Peterman et al. [26] recently analyzed four large datasets drawn from cancer and HIV/AIDS patients and found substantial and consistent correlations between meaning and multiple aspects of mental and physical HRQOL across the samples. Other studies have found that meaning in life was related to better self-rated health and HRQOL in a community sample of middle-aged women [27] and in cardiac outpatients [28].

Such linkages with meaning in life are found not only for subjective assessments such as HRQOL but also for objective health indices. For example, a 2-year prospective analysis of the Health and Retirement Survey, a large nationally representative sample in the USA, found that, controlling for a large set of potential confounding variables, meaning in life predicted lower rates of subsequent stroke [29] and myocardial infarction [30]. In a large, nationally representative sample in Hungary, life meaning was inversely related to cancer, cardiovascular, and total premature regional mortality rates, findings that held after controlling for gender, age, and education [31].

As important as a sense of meaning in life appears to be for everyday well-being, it may be particularly important to people when they are facing sickness or disability and thus may be especially critical for HRQOL. Myriad studies have documented that higher levels of meaning in life are associated with better self-rated health and HRQOL in medical populations [27], including in those living with serious illnesses such as cancer [32] and heart failure [33]. Meaning in life has been positively related to rate of recovery from knee surgery [34] and to higher mental and physical HRQOL, as well as less pain and fatigue, in rheumatoid arthritis patients [35].

Meaning influences HRQOL through multiple pathways

Relations between meaning in life and HRQOL may be mediated by multiple pathways, as illustrated in Fig. 2. First, health behaviors may be an important pathway of influence. Studies have demonstrated that people with a deeper sense of meaning in life tend to adopt more beneficial health behaviors. For example, in a large sample of undergraduate students, meaning in life was positively associated with a range of beneficial health behaviors including exercising, nutritious eating, and avoidance of tobacco [36]. Meaning in life has been related to the performance of health-promoting activities in many samples, including Anglo women (but not Hispanic women) [37], Japanese adults [38], and cardiac outpatients [28]. The reason for this linkage may be straightforward: People with more reasons for living and more satisfying life purposes may more strongly desire to keep on living; one way to do so is to practice good health behaviors. However, such an explanation awaits empirical validation.

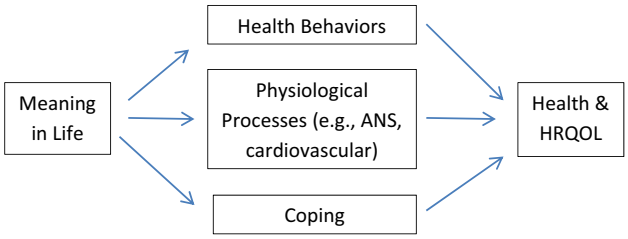

Fig. 2 Pathways through which meaning affects health and HRQOL

Second, meaning in life may also affect physical health directly through several different physiological processes. In experimental studies, higher levels of meaning in life were related to better autonomic nervous system functioning [39] and to lower mean heart rate and decreased heart rate reactivity [40]. In addition, life meaning was associated with lower aortic calcification in a community sample of middle-aged women [41] and to lower blood pressure in a community sample of people living in Chicago [42]. In a study of breast cancer patients, having a higher sense of meaning in life was related to subsequent increases in natural killer cell cytotoxicity, an important marker of successful immune functioning [43].

A third pathway through which meaning in life may influence health and HRQOL involves its coping and stress-buffering functions. For example, in a nationally representative sample of older adults, a strong sense of meaning in life buffered the impact of traumatic life events on depressive symptoms [44]. Having a strong sense of meaning and purpose provides people dealing with health conditions and illness a resource that is helpful in coping with the stressors they encounter; this sense of meaning and purpose is often expressed through transcendent spirituality or religiousness [7]. Coping that involves religiousness or spirituality has been shown to be very helpful in improving the mental and physical well-being of people dealing with many types of health problems, including cancer [45] and HIV [46].

Advancing the integration of positive psychology in HRQOL research

Positive psychology is a broad subfield that encompasses a variety of different constructs, many of which may usefully inform and further HRQOL research. However, lack of

conceptual clarity currently limits research progress. Advances in integrating positive psychology and HRQOL research will require careful attention to conceptualization of each. One broad conceptual issue is how positive psychology squares with HRQOL. Most research explicitly conducted from the positive psychology perspective has targeted general population samples, and in fact, many strictly positive psychology-focused researchers steer clear of illness-related functioning because it is not entirely "positive" (i.e., it occurs in the context of sickness) [47]. Because HRQOL by definition refers to "the functional effect of a medical condition and/or its consequent therapy upon a patient" [48], linking positive psychology and HRQOL research requires some broadening of scope for each.

Further, assessment of HRQOL has traditionally focused on bothersome symptoms or decrements or deviations from a normal level of functioning and well-being rather than on the possibilities of thriving or doing better than a baseline or better than expected [49]. Some researchers have recently suggested that quality of life (QOL) research should encompass the positive dimensions of functioning and well-being rather than focusing solely on decrements [e.g., 4, 50].

However, HRQOL is a specific subset of QOL that pertains to disability, illness, or pathology [51]. HRQOL research that integrates or focuses on positive aspects of well-being or that includes assessment tools that measure deviations of normal in the positive direction remains rare [51]. The enormously popular post-traumatic growth or benefit-finding research has been suggested as a way to incorporate a positive psychology perspective on illness [52], but the validity of this constructs remains undemonstrated and its value unclear [53, 54].

A related conceptual issue pertains to the ultimately desired goal state of positive psychology, which is often referred to as happiness [55]. Happiness has tremendous popular currency [56], but its imprecision has led some to reframe or rename the ultimate desired state from the perspective of positive psychology. Seligman [5] has settled on the term *flourishing*, defined as having adequate amounts of the five PERMA pillars in one's life. Further, the five pillars are likely to have a fair amount of conceptual and operational overlap, further complicating efforts to study their individual contributions to flourishing. At this point, it appears that flourishing is a conceptually useful concept but remains too operationally fuzzy to be useful in advancing research [4].

Another thorny conceptual issue is the extent to which the PERMA pillars form the conditions under which someone will experience a desired state such as flourishing or happiness, versus the extent to which these pillars comprise desirable states in and of themselves. For example, Seligman [5] describes the engaged life as one in which individuals experiences flow by being thoroughly invested in and following their pursuits (e.g., being one with the music, lack of awareness of the passage of time, full absorption in activities). For some, that flow state may in fact *constitute* the desired endstate [6]. Similarly, people who spend their lives in deeply meaningful pursuits such as spiritual communion or service to others may consider meaning in life to be the ultimate state that they seek. This issue is important in light of the recent attention given to patient-centered outcomes. For many people, both those with and without serious health issues, meaning in the form of spirituality or transcendence constitutes their ultimate desired state [7, 57] rather than being a pillar leading to some other state.

Conceptualizing positive psychology concepts such as meaning and spirituality as predictors or as desired outcomes matters, because this conceptualization determines the questions researchers ask and the methods they use to ask them. The lack of clarity on this issue has led to a plethora of research that conflates predictors and outcomes within the same study, producing results that are impossible to interpret. Some of the work on meaning and spirituality provides a prime example. As noted above, meaning and spirituality are often very important in the context of disease—a resource and part of the coping process in which people engage to deal with their illness. However, their spiritual lives are also a domain of well-being about which they care deeply, although most standard measures of HRQOL do not include spirituality. Thus, many studies have included the FACIT-Sp [58], which was designed to assess spiritual well-being, to complement other FACIT scales that tap into other aspects of HRQOL. However, the FACIT-Sp is often conceptualized as a *predictor* of HRQOL [59]. Such studies essentially show that spiritual well-being predicts other aspects of well-being.

Many psychometrically sound measures of positive psychology constructs are available for use by researchers. Once they are clear on the conceptualizations on which they will rely in their research, researchers should deliberately attend to the specific constructs assessed by various measures and select with care so that they are certain that the specific elements of positive psychology and HRQOL in which they are interested are those they are in fact assessing. One set of measures gaining popularity is the NIH Toolbox [60], a set of brief multidimensional measures assessing cognitive, emotional, motor, and sensory function designed to serve as a standard that can be used as a "common currency" across diverse study designs and settings. Among measures recently added to the Toolbox are those for psychological well-being (positive affect, life satisfaction, and meaning and purpose) [61]. Many similar measures are available and warrant consideration.

Among the interesting questions awaiting future research are how different constructs within positive psychology, such as the five pillars, differentially relate to different aspects of HRQOL, and the mechanisms through which these different elements may influence health and HRQOL. Such research will surely benefit from efforts to more clearly conceptualize and measure positive psychology constructs as well as from a thoughtful consideration of the desired ultimate goals or states of patients, an inquiry being made more prominent with the emphasis on patient-centered outcomes.

Clinical applications

Positive psychology opens new avenues for clinicians interested in improving HRQOL in the context of many health conditions and illnesses [52, 62]. One promising approach taken by positive psychologists is to assess and then build on individuals' strengths, based on the notion that greater reliance on one's highest strengths will lead to the experiencing of more positive emotion, engagement, meaning, positive relationships, and accomplishment and therefore flourishing [63]. A framework of strengths and methods for assessing them has been developed by positive psychologists (the Virtues in Action Inventory, measuring character strengths; [64]), but clinical interventions based on this scheme are quite early in their development [62].

Currently, the most widely used set of interventions derived from positive psychology are those focused on gratitude. Clients are encouraged to increase their sense of gratitude through techniques such as contemplating their blessings, making gratitude lists or diaries, and enacting behaviors expressing their gratitude, such as by writing a letter of thanks to an important person in their lives and reading the letter aloud to that person. Studies of the impact of gratitude interventions suggest that they are effective in improving well-being, although the research methodology of these studies is weak and findings should be regarded as preliminary [see 62].

To date, little clinical research from a positive psychology perspective has yet been conducted, and of that, very little on groups living with life-limiting or chronic illnesses. In addition, most of the research that has been conducted has not been methodologically rigorous. Further, some question the extent to which increasing happiness or flourishing is possible, given people's inherent tendency to readjust to baseline levels of well-being [e.g., 65]. Clearly, much additional research is necessary before clinical interventions based on positive psychology are ready for application to improve HRQOL in these groups. Yet such approaches remain promising. Understanding more about how to help people to successfully pursue PERMA elements such as positive emotions, relationships, and meaning may indeed lead to increases in flourishing and, presumably, in the context of health or medical conditions, HRQOL as well.

Summary

Positive psychology was developed to complement mainstream psychology's then-current focus on pathology, encouraging psychologists to include a focus the more aspirational aspects of being human [66]. Perhaps a similar development will occur as positive psychology and HRQOL are increasingly integrated: positive psychology may usefully help HRQOL researchers expand their focus from one primarily on deficits and impairments vis-à-vis a baseline or normative functioning to also consider the more positive ends of HRQOL.

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