

## Health Related Quality of Life (HRQOL)



### Well-Being Concepts

Well-being is a positive outcome that is meaningful for people and for many sectors of society, because it tells us that people perceive that their lives are going well. Good living conditions (e.g., housing, employment) are fundamental to well-being. Tracking these conditions is important for public policy. However, many indicators that measure living conditions fail to measure what people think and feel about their lives, such as the quality of their relationships, their positive emotions and resilience, the realization of their potential, or their overall satisfaction with life—i.e., their “well-being.”<sup>1, 2</sup> Well-being generally includes global judgments of life satisfaction and feelings ranging from depression to joy.<sup>3</sup>

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- Why is well-being useful for public health?
- How does well-being relate to health promotion?
- How is well-being defined?
- How is well-being measured?
- What are some findings from these studies?
- What are some correlates and determinants of individual-level well-being?
- What are some correlates of well-being at the national level?
- What is the difference between health-related quality of life, well-being, flourishing, positive mental health, optimal health, happiness, subjective well-being, psychological well-being, life satisfaction, hedonic well-being, and other terms that exist in the literature?
- What is CDC doing to examine and promote well-being?

## Why is well-being useful for public health?

- Well-being integrates mental health (mind) and physical health (body) resulting in more holistic approaches to disease prevention and health promotion.<sup>6</sup>
- Well-being is a valid population outcome measure beyond morbidity, mortality, and economic status that tells us how people perceive their life is going from their own perspective.<sup>1, 2, 4, 5</sup>
- Well-being is an outcome that is meaningful to the public.
- Advances in psychology, neuroscience, and measurement theory suggest that well-being can be measured with some degree of accuracy.<sup>2, 7</sup>
- Results from cross-sectional, longitudinal and experimental studies find that well-being is associated with<sup>1, 8</sup>:
  - Self-perceived health.
  - Longevity.
  - Healthy behaviors.
  - Mental and physical illness.
  - Social connectedness.
  - Productivity.
  - Factors in the physical and social environment.
- Well-being can provide a common metric that can help policy makers shape and compare the effects of different policies (e.g., loss of greenspace might impact well-being more so than commercial development of an area).<sup>4, 5</sup>
- Measuring, tracking and promoting well-being can be useful for multiple stakeholders involved in disease prevention and health promotion.

Well-being is associated with numerous health-, job-, family-, and economically-related benefits.<sup>8</sup> For example, higher levels of well-being are associated with decreased risk of disease, illness, and injury; better immune functioning; speedier recovery; and increased longevity.<sup>9-13</sup> Individuals with high levels of well-being are more productive at work and are more likely to contribute to their communities.<sup>4</sup>

Previous research lends support to the view that the negative affect component of well-being is strongly associated with neuroticism and that positive affect component has a similar association with extraversion.<sup>15, 16</sup> This research also supports the view that positive emotions—central components of well-being—are not merely the opposite of negative emotions, but are independent dimensions of mental health that can, and should be fostered.<sup>17, 25</sup> Although a substantial proportion of the variance in well-being can be attributed to heritable factors,<sup>26, 27</sup> environmental factors play an equally if not more important role.<sup>4, 5, 28</sup>

### **How does well-being relate to health promotion?**

Health is more than the absence of disease; it is a resource that allows people to realize their aspirations, satisfy their needs and to cope with the environment in order to live a long, productive, and fruitful life.<sup>25, 29-31</sup> In this sense, health enables social, economic and personal development fundamental to well-being.<sup>25, 30,</sup>

<sup>31</sup> Health promotion is the process of enabling people to increase control over, and to improve their health.<sup>25, 30, 32</sup> Environmental and social resources for health can include: peace, economic security, a stable ecosystem, and safe housing.<sup>30</sup> Individual resources for health can include: physical activity, healthful diet, social ties, resiliency, positive emotions, and autonomy. Health promotion activities aimed at strengthening such individual, environmental and social resources may ultimately improve well-being.<sup>24, 25</sup>

### **How is well-being defined?**

There is no consensus around a single definition of well-being, but there is general agreement that at minimum, well-being includes the presence of positive emotions and moods (e.g., contentment, happiness), the absence of negative emotions (e.g., depression, anxiety), satisfaction with life, fulfillment and positive functioning.<sup>4, 33-35</sup> In simple terms, well-being can be described as judging life positively and feeling good.<sup>36, 37</sup> For public health purposes, physical well-being (e.g., feeling very healthy and full of energy) is also viewed as critical to overall well-being. Researchers from different disciplines have examined different aspects of well-being that include the following<sup>4, 34, 38, 39, 41-46</sup>:

- Physical well-being.
- Economic well-being.
- Social well-being.
- Development and activity.

- Emotional well-being.
- Psychological well-being.
- Life satisfaction.
- Domain specific satisfaction.
- Engaging activities and work.

### How is well-being measured?

Because well-being is subjective, it is typically measured with self-reports.<sup>40</sup> The use of self-reported measures is fundamentally different from using objective measures (e.g., household income, unemployment levels, neighborhood crime) often used to assess well-being. The use of both objective and subjective measures, when available, are desirable for public policy purposes.<sup>5</sup>

There are many well-being instruments available that measure self-reported well-being in different ways, depending on whether one measures well-being as a clinical outcome, a population health outcome, for cost-effectiveness studies, or for other purposes. For example, well-being measures can be psychometrically-based or utility-based. Psychometrically-based measures are based on the relationship between, and strength among, multiple items that are intended to measure one or more domains of well-being. Utility-based measures are based on an individual or group's preference for a particular state, and are typically anchored between 0 (death) to 1 (optimum health). Some studies support use of single items (e.g., global life satisfaction) to measure well-being parsimoniously. Peer reports, observational methods, physiological methods, experience sampling methods, ecological momentary assessment, and other methods are used by psychologists to measure different aspects of well-being.<sup>42</sup>

Over the years, for public health surveillance purposes, CDC has measured well-being with different instruments including some that are psychometrically-based, utility-based, or with single items:

Survey	Questionnaires/questions
National Health and Nutrition Examination Survey (NHANES)	<ul style="list-style-type: none"> <li>General Well-Being Schedule (1971–1975).<sup>43,44</sup></li> </ul>
National Health Interview Survey (NHIS)	<ul style="list-style-type: none"> <li>Quality of Well-being Scale.<sup>45</sup></li> <li>Global life satisfaction.</li> <li>Satisfaction with emotional and social support.</li> <li>Feeling happy in the past 30 days.</li> </ul>
Behavioral Risk Factor Surveillance System (BRFSS)	<ul style="list-style-type: none"> <li>Global life satisfaction.</li> <li>Satisfaction with emotional and social support.<sup>47, 48</sup></li> </ul>
Porter Novelli Healthstyles Survey	<ul style="list-style-type: none"> <li>Satisfaction with Life Scale.<sup>49</sup></li> <li>Meaning in life.<sup>50</sup></li> <li>Autonomy, competence, and relatedness.<sup>51</sup></li> <li>Overall and domain specific life satisfaction.</li> <li>Overall happiness.</li> <li>Positive and Negative Affect Scale.<sup>52</sup></li> </ul>

### What are some findings from these studies?

- Data from the NHANES I (1971–1975), found that employed women had a higher sense of well-being and used fewer professional services to cope with personal and mental health problems than their nonemployed counterparts.<sup>53</sup>
- Data from the 2001 NHIS and Quality of Well-Being scale, a preference based scale which scores well-being between 0-1, found that males or females between the ages of 20–39 had significantly better well-being (scores  $\geq 0.82$ ) compared with males or females 40 years of age or older (scores  $>0.79$ ).<sup>54</sup>
- Data from the 2005 Behavioral Risk Factor Surveillance System found that 5.6% of US adults (about 12 million) reported that they were dissatisfied/very dissatisfied with their lives.<sup>48</sup>
- Data from the 2005 BRFSS found that about 8.6% of adults reported that they rarely/never received social and emotional support; ranging in value from 4.2% in Minnesota to 12.4% in the US Virgin Islands.<sup>47</sup>
- Based on 2008 Porter Novelli HealthStyles data.<sup>55</sup>
  - 11% of adults felt cheerful all of the time in the past 30 days.

- 15% of adults felt calm and peaceful all of the time in the past 30 days.
- 13% of adults felt full of life all of the time in the past 30 days.
- 9.8% of adults strongly agree that their life is close to their ideal.
- 19% of adults strongly agree that they are satisfied with their life.
- 21% of adults strongly agree that their life has a clear sense of purpose.
- 30% of adults strongly agree that on most days they feel a sense of accomplishment from what they do.

### What are some correlates and determinants of individual-level well-being?

There is no sole determinant of individual well-being, but in general, well-being is dependent upon good health, positive social relationships, and availability and access to basic resources (e.g., shelter, income).

Numerous studies have examined the associations between determinants of individual and national levels of well-being. Many of these studies have used different measures of well-being (e.g., life satisfaction, positive affect, psychological well-being), and different methodologies resulting in occasional inconsistent findings related to well-being and its predictors.<sup>37, 56</sup> In general, life satisfaction is dependent more closely on the availability of basic needs being met (food, shelter, income) as well as access to modern conveniences (e.g., electricity). Pleasant emotions are more closely associated with having supportive relationships.<sup>5</sup>

Some general findings on associations between well-being and its associations with other factors are as follows:

### **Genes and Personality**

At the individual level, genetic factors, personality, and demographic factors are related to well-being. For example, positive emotions are heritable to some degree (heritability estimates range from 0.36 to 0.81), suggesting that there may be a genetically determined set-point for emotions such as happiness and sadness.<sup>26,27,57,58,59</sup> However, the expression of genetic effects are often influenced by factors in the environment implying that circumstances and social conditions do matter and are actionable from a public policy perspective. Longitudinal studies

have found that well-being is sensitive to life events (e.g., unemployment, marriage).<sup>60, 61</sup> Additionally, genetic factors alone cannot explain differences in well-being between nations or trends within nations.

Some personality factors that are strongly associated with well-being include optimism, extroversion, and self-esteem.<sup>20, 62</sup> Genetic factors and personality factors are closely related and can interact in influencing individual well-being.

While genetic factors and personality factors are important determinants of well-being, they are beyond the realm of public policy goals.

### **Age and Gender**

Depending on which types of measures are used (e.g., life satisfaction vs. positive affect), age and gender also have been shown to be related to well-being. In general, men and women have similar levels of well-being, but this pattern changes with age,<sup>63</sup> and has changed over time.<sup>64</sup> There is a U-shaped distribution of well-being by age—younger and older adults tend to have more well-being compared to middle-aged adults.<sup>65</sup>

### **Income and Work**

The relationship between income and well-being is complex.<sup>4, 39, 65</sup> Depending on which types of measures are used and which comparisons are made, income correlates only modestly with well-being. In general, associations between income and well-being (usually measured in terms of life satisfaction) are stronger for those at lower economic levels, but studies also have found effects for those at higher income levels.<sup>66</sup> Paid employment is critical to the well-being of individuals by conferring direct access to resources, as well as fostering satisfaction, meaning and purpose for some.<sup>67</sup> Unemployment negatively affects well-being, both in the short- and long-term.<sup>61, 65, 67</sup>

### **Relationships**

Having supportive relationships is one of the strongest predictors of well-being, having a notably positive effect.<sup>68, 69</sup>

What are some correlates of well-being at the national level?

Countries differ substantially in their levels of well-being.<sup>4, 70</sup> Societies with higher well-being are those that are more economically developed, have effective governments with low levels of corruption, have high levels of trust, and can meet citizens' basic needs for food and health.<sup>4, 5</sup> Cultural factors (e.g., individualism vs. collectivism, social norms) also play a role in national estimates of well-being.<sup>70</sup>

What is the difference between health-related quality of life, well-being, flourishing, positive mental health, optimal health, happiness, subjective well-being, psychological well-being, life satisfaction, hedonic well-being, and other terms that exist in the literature?<sup>71</sup>

Some researchers suggest that many of the terms are synonymous, whereas others note that there are major differences based on which dimensions are independent and contribute most to well-being.<sup>37, 71</sup> This is an evolving science, with contributions from multiple disciplines. Traditionally, health-related quality of life has been linked to patient outcomes, and has generally focused on deficits in functioning (e.g., pain, negative affect). In contrast, well-being focuses on assets in functioning, including positive emotions and psychological resources (e.g., positive affect, autonomy, mastery) as key components. Some researchers have drawn from both perspectives to measure physical and mental well-being for clinical and economic studies. Subjective well-being typically refers to self-reports contrasted with objective indicators of well-being. The term, "positive mental health" calls attention to the psychological components that comprise well-being from the perspective of individuals interested primarily in the mental health domain. From this perspective, positive mental health is a resource, broadly inclusive of psychological assets and skills essential for well-being.<sup>24, 25</sup> But, the latter generally excludes the physical component of well-being. "Hedonic" well-being focuses on the "feeling" component of well-being (e.g., happiness) in contrast to "eudaimonic" well-being which focuses on the "thinking" component of well-being (e.g., fulfillment).<sup>35</sup> People with high levels of positive emotions, and those who are functioning well psychologically and socially are described by some as having complete mental health, or as "flourishing."<sup>46</sup>

In summary, positive mental health, well-being and flourishing refer to the presence of high levels of positive functioning—primarily in the mental health domain (inclusive of social health). However, in its broadest sense, well-being encompasses physical, mental, and social domains.



The reasons why well-being and related constructs should be measured and evaluating how these domains can be changed should help inform which domains (e.g., life satisfaction, positive affect, autonomy, meaning, vitality, pain) should be measured, and which instruments and methods to use.<sup>71</sup>

### What is CDC doing to examine and promote well-being?

CDC's Health-Related Quality of Life Program has led an effort since 2007 to examine how well-being can be integrated into health promotion and how it can be measured in public health surveillance systems.<sup>55</sup> A number of studies have examined the feasibility of existing scales for surveillance, including application of item-response theory to identify brief, psychometrically sound short-form(s) that can be used in public health surveillance systems.<sup>72,73</sup> CDC and three states (OR, WA, NH) collected data using the Satisfaction with Life Scale and other well-being measures on the 2010 Behavioral Risk Factor Surveillance System.<sup>74</sup> CDC also led the development of overarching goals related to quality of life and well-being for the [Healthy People 2020](#)<sup>External</sup> initiative.

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