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Satellite meeting

Measuring subjective well-being:
an opportunity for National Statistical Offices?

Florence, 23-24 July 2009

U.S. Centers for Disease Control and Prevention's Well-Being Initiative: An overview

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The findings and conclusions in this report are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention.

Introduction

Following largely a medical and epidemiologic model of disease and risk factor prevention, public health has made great strides in preventing illness and disease associated with communicable and chronic diseases and in increasing lifespan (Kinsella & Velkoff, 2001; CDC, 2003). Some have argued that it's easier to fight against sickness than to fight for greater wellbeing (Dunn, 1961). The monitoring and promotion of well-being provide new opportunities for public health in its "3rd revolution[1]" to integrate mental health with physical health; to contextualize well-being by examining its social determinants; and to promote positive factors that enhance well-being not merely to prevent the factors that might worsen it (Breslow, 2004, 2006). To assess population well-being, indicators and measurement needs to go beyond the morbidity, mortality and risk factor assessments common in public health. Many of these indicators fail to capture the actual experiences of people's lives—the quality of their relationships, the regulation of their emotions, their physical and mental functioning, and the realization of their potential (Diener & Seligman, 2004; NEF, 2009). Well-being, viewed holistically as an integration of mental, physical, and social domains is associated with numerous benefits to health, family, work, and economic status (Diener & Seligman, 2004; Diener et al., 2009). Measuring and tracking well-being can also help those involved in promoting health such as local and state government social service providers, the business community, health care systems, transportation, parks and recreation, and local community groups that support policies and programs conducive of well-being.

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1 The first "revolution" (i.e., era) focused on communicable diseases; the second on chronic disease (Terris, 1983, Breslow, 2006)

CDC Well-Being Initiative

To improve population health and well-being, CDC's Coordinating Center for Health Promotion began in 2007 to explore the science and the policy applications of well-being. Initial efforts focused on measurement, with the ultimate goal of creating a parsimonious set of well-being measures that can be used in population surveillance systems that would provide national, state, and local data on well-being.

CDC convened a professionally diverse internal workgroup to provide guidance about measuring well-being in such a way that it both encompasses physical, mental and social domains (consistent with the WHO definition of health) and shows face validity for public health practice (WHO, 1949). The workgroup has reviewed well-being domains and measures, the use of well-being measures for public health surveillance, and other countries' initiatives around the use of well-being for public policy. Following this extensive review and using an iterative process, this workgroup defined well-being as "*a relative and dynamic state where one maximizes his or her physical, mental, and social functioning in the context of supportive environments to live a full, satisfying and productive life.*" An underlying assumption for this definition is that not only public health and the health care system, but all sectors of society have responsibility for well-being.

The workgroup reviewed many validated scales to measure well-being and related health states, including hedonic measures, flourishing measures; objective list accounts, preference-based measures, and quality of life measures (e.g., Diener, et al., 1985; Ryff & Singer, 1998; Ryff & Keyes, 1995, Peterson et al., 2005; Keyes, 2007; Gold et al., 1996; Ware & Sherbourne, 1992; Ware et al., 1996; McNair et al., 1971; Steger et al., 2006; Watson et al., 1988; Kammann

& Flett 1983; Cummins, 2003; Goldberg & Williams, 1988, WHOQOLGroup, 1995; Bonomi et al., 2000). This review also considered closely-related scales and items previously included on U.S. public health surveillance systems such as the National Health Interview Survey (e.g., Quality of Well-Being Scale), the National Health and Nutrition Examination Survey (e.g., General Well-Being Schedule), the Medicare Health Outcomes Survey (e.g., CDC Healthy Days), and the Behavioral Risk Factor Surveillance System (BRFSS: e.g., CDC Healthy Days, social support, life satisfaction), and on studies already underway (e.g., the Health Measurement Research Group, Statistics Canada, the European Commission, WHO). The workgroup paid particular attention to key reports describing consensus efforts around measuring well-being for public policy (Hird, 2003; Samman, 2007; Dolan et al., 2006). The workgroup was also guided by almost two decades of research related to health-related quality of life (HRQOL) assessment for population health surveillance (e.g., balancing the need for short recall periods associated with recent symptoms and behaviors, with recall periods that can capture variability in perceptions of HRQOL) (CDC, 2000).

For many psychological studies, it is important to have very precise and detailed measures (Frey & Stutzer, 2002). However, surveillance is often a broad and imprecise snapshot of what is going on in the population and is often used to inform more detailed studies (Teutsch & Churchill, 1994). Because space is at a premium on surveillance systems, the workgroup realized that extensive multi-item scales are expensive in cost and time and can rarely be supported and sustained. As seen in HRQOL assessment, brief, global items tapping into physical and mental health domains are psychometrically robust and useful as broad population outcomes relevant for public policy (Hagerty et al., 2001; IOM, 2008; CDC, 2009). For example, geographic disparities and worsening trends in frequent mental distress were recently highlighted

in the popular press using a single BRFSS item that asks about mentally unhealthy days (National Geographic, 2009). Additionally, as seen in almost two decades of HRQOL assessment in the U.S., states and communities may be interested in and/or can support two to four specific items that indicate a few domains (e.g., physically and mentally unhealthy days and activity limitation days) (CDC, 2009).

With these considerations in mind, along with interest in comparative studies, the CDC workgroup suggested several well-being scales identified by the U.K. Oxford Poverty and Human Development Initiative (OPHI), which proposed a set of international indicators for well-being assessment (Samman, 2007). These scales cover 1) satisfaction with life (Diener et al., 1985); 2) meaning in life (Steger et al., 2006); 3) basic psychological needs of autonomy, competence, and relatedness (Deci & Ryan, 2000); 4) domain specific life satisfaction (e.g., education, work, spirituality), and 5) positive affect (Dolan, 2006; Samman, 2007; Watson, 1988)[2]. Finally, to maximize an understanding of health as a complete state, including physical, mental and social well-being, the workgroup proposed inclusion of validated items from existing U.S. public health surveys to assess physical well-being operationalized with select CDC HRQOL measures (CDC, 2000). Domain-specific life satisfaction items identified as relevant for public health included satisfaction with: education; present job or work; spirituality/religious/philosophical beliefs; housing; family life; health; friends and social life; neighborhood; ability to help others; achievement of goals; leisure; physical safety; and energy level. The use of short subscales and various domain-specific life satisfaction items potentially offers states and communities the flexibility to examine well-being domains of particular interest to local needs.

[2] CDC obtained permission from scale authors to use items.

Content Validity

Eleven experts in well-being and public health surveillance content undertook a content validity exercise. These experts were asked to review and to rate the OPHI scales and single items on the following criteria:

1) Do these scales adequately assess well-being for public health surveillance?

2) Are the proposed measures relevant for public health practice?

3) Should any of these measures be dropped?

4) Do you have recommendations for other measures?

In general, these experts supported measuring well-being, shifting the focus from health as the end point to health as a critical determinant for a full, satisfying, and productive life. However, some were concerned about the ability for well-being measures to guide public health action or to detect meaningful changes in population health, and some questioned whether changes in well-being could be exclusively attributed to public health intervention. While these experts generally agreed on the content validity of scales and/or individual items as they tap into the construct of well-being, some expressed concerns regarding cultural validity for individual items (e.g., autonomy; changing past aspects of life). Some expressed support for an exclusive focus on psychological well-being, operationalized with validated flourishing measures.

Pilot Testing

After slight modification to the wording and the response scales that the authors of the scales approved (e.g., use of 5-point rather than 7-point response scale for meaning in life scale), these scales and other select items (e.g., CDC HRQOL-14 vitality days measure) were selected for inclusion on the 2008 HealthStyles Survey for pilot testing to assess the psychometric

properties of scales and/or items, and to examine the response distribution in a large community-based sample of U.S. adults.[3]

The HealthStyles survey, conducted annually since 1995 (with partial support from agencies such as CDC and the Substance Abuse and Mental Health Services Administration [SAMHSA]), is designed to assess people's attitudes and beliefs about chronic and infectious diseases, behaviors, exposure to health information and communication campaigns, and self-reported symptoms, diseases and disorders. The self-administered mailed survey is conducted in a nationally representative sample of ~5,200 community-dwelling adults, and has been shown to give comparable prevalence estimates on risk factors with random sampling methodology used on BRFSS (Pollard, 2002; CDC unpublished data, 2009).

Pilot Testing Preliminary Results

Scale reliability coefficients have been examined, and associations between domains have been examined to assess construct validity. Univariate analyses examining scale scores or single item scores stratified by sex, age, race/ethnicity, income, education, and marital status have been conducted. Data have been analyzed using both parametric and non-parametric statistics to account for the generally negatively skewed responses and ordinal nature of response scales. Additionally, in collaboration with the National Institute of Health Toolbox Initiative, the data have undergone preliminary factor analysis (NIH Toolbox, 2009). A manuscript is being prepared to describe these results. These preliminary analyses have also been instrumental in informing the crafting of developmental objectives on subjective well-being for the U.S. Healthy People 2020 health policy planning initiative.

[3] This pilot testing was the initial test of a series of planned pilot tests to determine both the face validity and measurement properties of the scales selected, to allow for consideration of other scales and/or items if deemed necessary.

Next Steps: Healthy People 2020 & BRFSS

The Healthy People initiative provides science-based, 10-year national objectives for promoting health and preventing disease in the U.S. Since 1979, this initiative has set and monitored national health objectives to meet a broad range of health needs, encourage collaborations across sectors, guide individuals toward making informed health decisions, and measure the impact of prevention activities. Every 10 years, the U.S. Department of Health and Human Services (DHHS) leverages scientific insights and lessons learned from the past decade, along with new knowledge of current data, trends, and innovations. Healthy People 2020 will reflect assessments of major risks to health and wellness, changing public health priorities, and emerging issues related to health preparedness and prevention in the U.S population (DHHS, 2009). A number of groups are involved in objective setting activities. For example, a disability workgroup composed of representatives from different federal agencies, constituent organizations, academics and other public health and health care professionals are crafting objectives related to people with disabilities. Similarly, following interest to focus on broad population health outcomes that can be tied to social determinants of health, a workgroup was coordinated by CDC to develop objectives related to both HRQOL and well-being. Members of the committee included individuals from federal agencies such as DHHS, CDC, SAMHSA, the National Institutes of Health, and academicians. Over several months, the workgroup members discussed on a weekly conference call how to develop and operationalize the HRQOL and the well-being objectives and measures for Healthy People 2020. The workgroup discussed the theoretical background of both traditional HRQOL assessment (i.e., a deficit based approach) and well-being assessment (i.e., an asset-based approach). The workgroup preferred to maintain the distinction between HRQOL assessment and well-being assessment for Healthy People 2020

to parallel the traditions of both approaches. Following considerable discussions and debate, the workgroup proposed the following developmental objectives for well-being assessment in Healthy People 2020, pending formal approval by the Department of Health and Human Services:

> Overall Objective: Increase the percentage of persons in the population who report physical, mental, and social well-being.[4]
>
> 1a. Increase the percentage of adults who report satisfaction with life
> 1b. Increase the percentage of adults who report feeling positive affect
> 1c. Increase the percentage of adults who report receiving social and emotional support
> 1d. Increase the percentage of adults who report 20 or more days of vitality
> 1e. Increase the percentage of adults who report a sense of autonomy, competence and relatedness

Additionally, with respect to further pilot testing and evaluation of well-being scales and items for public health surveillance, CDC will support several states in 2010-2011 to continue pilot testing proposed scales for use in random-digit-dialed telephone surveys such as the BRFSS.

Conclusions

Health is more than the absence of disease (WHO, 1949, IOM, 2003). Promoting health must: a) include more than preventing or minimizing disease; b) focus on health as a resource for everyday living by enhancing individual and community resources that support health and well-being; and c) consider the relationship between individuals and their environment (Breslow, 1006; IOM, 2003; NRC, 2001; Glanz et al., 2002). A population-health approach might target both individual and community-level factors both to improve well-being in those who are not doing well and to maintain high levels of well-being in those who are doing well.

[4] These developmental objectives will undergo additional review and possible changes by various groups involved with the Healthy People 2020 Process.

CDC's preliminary activities toward well-being assessment may be useful in supplementing traditional measures of risk factors, disease, and disability and may provide insight into how the general population thinks and feels about their lives within their physical and social environments.

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