
Promoting and Protecting Mental Health as Flourishing

A Complementary Strategy for Improving National Mental Health

Corey L. M. Keyes
Emory University

This article summarizes the conception and diagnosis of the mental health continuum, the findings supporting the two continua model of mental health and illness, and the benefits of flourishing to individuals and society. Completely mentally healthy adults—individuals free of a 12-month mental disorder and flourishing—reported the fewest missed days of work, the fewest half-day or greater work cutbacks, the healthiest psychosocial functioning (i.e., low helplessness, clear goals in life, high resilience, and high intimacy), the lowest risk of cardiovascular disease, the lowest number of chronic physical diseases with age, the fewest health limitations of activities of daily living, and lower health care utilization. However, the prevalence of flourishing is barely 20% in the adult population, indicating the need for a national program on mental health promotion to complement ongoing efforts to prevent and treat mental illness. Findings reveal a Black advantage in mental health as flourishing and no gender disparity in flourishing among Whites.

Keywords: mental health, flourishing, mental illness, subjective well-being, race and ethnicity

The National Institute of Mental Health (NIMH) recently declared cure therapeutics as a goal of its portfolio of research (Insel & Scolnick, 2006). The assumption is that by reducing the number of cases of mental illness, either by preventing those at risk or by successfully treating more cases of mental illness, the American population will be mentally healthier. This is truly an assumption, because it rests on one of the most simple and inexplicably untested empirical hypotheses: The absence of mental illness is the presence of mental health. Put in psychometric terminology, the success of the current approach to mental health hinges on the hypothesis that measures of mental illness and measures of mental health belong to a single, bipolar latent continuum.

There is mounting empirical evidence that the paradigm of mental health research and services in the United States must change in the 21st century. First, measures of mental illness and measures of mental health form two distinct continua in the U.S. population (Keyes, 2005b). Second, measures of disability, chronic physical illness, psychosocial functioning, and health care utilization reveal that anything less

than flourishing is associated with increased impairment and burden to self and society. Third, only a small proportion of those otherwise free of a common mental disorder are mentally healthy (i.e., flourishing). Put simply, the absence of mental illness is not the presence of mental health; flourishing individuals function markedly better than all others, but barely one fifth of the U.S. adult population is flourishing (Keyes, 2002, 2003, 2004, 2005a, 2005b).

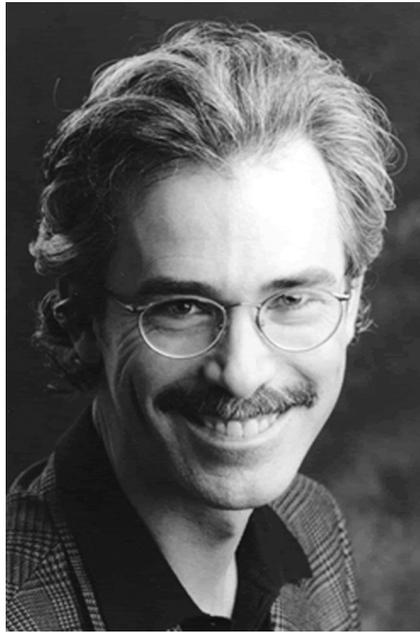
The two continua model (see also Tudor, 1996) calls for the adoption of a second, complementary national strategy: the promotion and maintenance of genuine mental health as flourishing. Curing or eradicating mental illness will not guarantee a mentally healthy population. Because mental health belongs to a separate continuum, and the absence of mental health—a condition described later as “languishing in life”—is as bad as major depressive episode (MDE), the current national strategy of focusing solely on mental illness can, at best, reduce mental illness but not promote mental health. The U.S. strategy for mental health must simultaneously (a) continue to seek to prevent and treat cases of mental illness and (b) seek to understand how to promote flourishing in individuals otherwise free of mental illness but not mentally healthy. To paraphrase the famous Johnny Mercer song (Mercer & Arlen, 1944), if mental health is truly society’s national objective—and I would like to make a case in this article that it must be—then it has to “accentuate the positive [i.e., flourishing], eliminate the negative [i.e., mental illness] . . . , and don’t mess with mister in-between [i.e., languishing].”

Stuck in the Past: The Meanings of Health

The U.S. national vision of health is rooted in a bygone era; recognizing this is the first step toward adopting a complementary approach to national mental health. Throughout human history, there have been three conceptions of health.

This article is derived from my invited presidential plenary address at the 113th Annual Convention of the American Psychological Association, Washington, DC, August 2005.

Correspondence concerning this article should be addressed to Corey L. M. Keyes, Department of Sociology and Department of Behavioral Sciences and Health Education, Emory University, Room 225 Tarbuton Hall, 1555 Dickey Drive, Atlanta, GA 30322. E-mail: corey.keyes@emory.edu



Corey L. M. Keyes

The pathogenic approach is the first, most historically dominant vision, derived from the Greek word *pathos*, meaning suffering or an emotion evoking sympathy. The pathogenic approach views health as the absence of disability, disease, and premature death. The second approach is the salutogenic approach, which can be found in early Greek writings and was popularized by Antonovsky (1979) and humanistic scholarship (e.g., Carl Rogers and Abraham Maslow). Derived from the word *salus*, meaning health, the salutogenic approach views health as the presence of positive states of human capacities and functioning in thinking, feeling, and behavior (Strümpfer, 1995). The third approach is the complete state model, which derives from the ancient word for health as being *hale*, meaning whole and strong. This approach is exemplified in the World Health Organization's (1948) definition of overall health as a complete state, consisting of the presence of a positive state of human capacities and functioning as well as the absence of disease or infirmity. By subsuming the pathogenic and salutogenic paradigms, the whole states approach is, in my opinion, the only paradigm that can achieve true population health.

The pathogenic approach to health has justifiably dominated human history, because only a few nations have recently undergone the epidemiological transition. This transition refers to a historical change in the cause of death and illness from acute and infectious to chronic and modifiable lifestyle causes (see, e.g., Gribble & Preston, 1993). Before this transition, life was, to paraphrase Thomas Hobbes (1651), “nasty, brutish, and short” because of acute and infectious diseases and illness. The United States and other industrialized nations underwent the epidemiological transition in the 20th century, during which life expectancy at birth increased by an average of 30 years for Americans,

which amounted to adding more years of life during the past 100 years than all prior centuries combined.

Clearly, Americans have shown themselves capable of molding the conditions of life that hasten death and acute diseases. Believing that reducing premature mortality—that is, increasing longevity—is the gold standard of population health, America has been sobered by the rise in a host of health-related problems (e.g., a threefold increase in teen suicide, more adults with anxiety and depression, and more lifestyle and stress-related chronic physical health conditions; see, e.g., Stiles, 2005). Increased life expectancy has increased the number of years spent living with chronic physical diseases and mental disorders rather than greater health.

This epidemiological paradox has happened for at least three reasons. First, with age, biological, cellular (e.g., free radicals and oxidative stress), and genetic (e.g., telomere shortening) responses to stress and the normal adaptation to life's demands produce long-term wear and tear on organ systems (see, e.g., Epel et al., 2004; McEwen, 1998). Thus, with time, all individuals will experience some physical, physiological, or neurological disorder or disease. Second, although risk of physical disease is rather low in youth and younger adults, some chronic problems such as diabetes, asthma, and even cardiovascular disease (CVD) are now occurring at younger ages (Nusselder, van der Velden, von Sonsbeek, Lenoir, & van den Bos, 1996; Olshansky, Rudberg, Carnes, Cassell, & Brody, 1991). Modifiable lifestyle factors that do not necessarily influence the overall population's life expectancy now affect individuals' levels of physical and mental health. Third, increased life expectancy has not ushered in a paradigm shift toward a salutogenic approach to complement the health care system that was built to address the pathogenic crisis when life was “nastier, brutish, and shorter.”

Before the epidemiological transition, biomedical and public health practices of pursuing health by creating and implementing prevention and panaceas for illness and disease were cost-effective and benefited citizens by increasing life expectancy.¹ The continued attempt to improve population health solely by disease and illness prevention and panaceas after the epidemiological transition has proven extremely costly and largely ineffective. The United States is among three nations worldwide that now spends over 10% of its gross domestic product on health care (Reinhardt, Hussey, & Anderson, 2004), and health care consumes the largest percentage of the U.S. gross domestic product, more than housing, food, or defense spending (BlueCross & BlueShield, 2006). For the average American family, health care in the 21st century is likely to rival the purchase of a home, which historically has been a family's greatest expenditure (Lamm & Morreim, 2002). In 1999, diabetes, for example, resulted in a combined cost (i.e., direct costs due to health care and indirect costs due to

¹ Although life expectancy has increased in racial-ethnic minorities, the disparities between Caucasians (non-Hispanic) and minority populations have not decreased.

productivity losses) of approximately \$95 billion, cancers resulted in a combined cost of \$94 billion, arthritis resulted in a combined cost of \$61 billion, digestive disorders resulted in a combined cost of \$53 billion, stroke resulted in a combined cost of \$40 billion, whereas HIV-AIDS cost about \$22 billion. CVD was the most costly condition at \$180 billion in combined costs (Keyes & Lopez, 2002). Unsurprisingly, rates of health care for the uninsured and the inadequately insured have been on the rise because employers, who are primary providers of health care coverage, are trying to hold down their costs.

Enter Mental Illness: A Global, Chronic, and Prevalent Burden

Until the mid-1990s, mental illnesses were overlooked as sources of economic burden to developing and developed nations. However, in the United States, in terms of combined direct and indirect costs, mental illness is among the three most costly conditions (Keyes & Lopez, 2002). That is, after CVD, mental disorder was the third most costly category of conditions at approximately \$160 billion in 1999, just behind the burden of physical rehabilitation, which came in at second place (Keyes & Lopez, 2002). Major depression alone has been estimated to cost in excess of \$40 billion in combined direct and indirect costs (Greenberg, Stiglin, Finkelstein, & Berndt, 1993). Worldwide, mental illness has been shown to be among the top five causes of disability-adjusted life years, a composite measure of the burden of disease conditions in terms of the number of years of life lost prematurely to death and the number of years lived with disability in a population (Murray & Lopez, 1996, 1997). Within the category of mental illness, major (unipolar) depressive episode has been shown to be among the leading causes of disability-adjusted life years, second only to coronary artery disease (Murray & Lopez, 1996).

While posing a burden to society, mental illnesses have proven to be prevalent and chronic conditions. Before the age of 55, half of all adults will have experienced at least one serious mental illness; approximately one quarter of adults experience a serious mental illness each year (Robins & Regier, 1991; U.S. Public Health Service, 1999). By the age of 18, as many as 20% of youths will have had a case of clinical depression (Lewinsohn, Hops, Roberts, & Seeley, 1993). Depression is projected to become even more prevalent worldwide and the second leading cause of disability-adjusted life years within the first quarter of the 21st century (Murray & Lopez, 1996). The average age of first onset of mood and anxiety disorders has decreased (Burke, Burke, Rae, & Regier, 1991; Cross-National Collaborative Group, 1992; Wickramaratne, Weissman, Leaf, & Holford, 1989), and research shows that a prior episode of a mental illness such as MDE significantly increases the risk of subsequent episodes of mental illness (Angst, 1988; Gonzales, Lewinsohn, & Clarke, 1985; Lewinsohn, Hoberman, & Rosenbaum, 1988; Piccinelli & Wilkinson, 1994).

Substantial strides have been made by increasing the array and effectiveness of mental illness treatments (Hollon, Thase, & Markowitz, 2002; Seligman, 1995; U.S. Public Health Service, 1999). However, the promise of a cure therapeutic for any mental illness may be a chimera or distant accomplishment because of a variety of imposing scientific challenges. Mental disorders continue to be identified as variegated syndromes and may therefore never be amenable to specific diagnostic tests. The remission of mental illness using current pharmacotherapies or psychotherapies is partial or short lived, and as much as one third of patients do not respond to the recommended treatments (Keller, Shapiro, Lavori, & Wolfe, 1982; O'Reardon, Brunswick, & Amsterdam, 2000; Ramana et al., 1995). The search for and discovery of a cure for mental illness, and the advent of universal insurance coverage for its accoutrements, could further bankrupt the U.S. health care system and impede the necessary paradigm shift in health care.

The goals of cures and eradication are relics of the pre-epidemiological transition, when this nation confronted infectious diseases and medical conditions that fit the classic definition of a disease (see Szasz, 2001) with an underlying physical or physiological lesion or pathology. Few chronic physical conditions have shown themselves amenable to cures but have rather been approached in terms of latter stages (i.e., secondary or tertiary) of prevention. It may be more cost effective to engage in primary prevention of various health conditions among individuals most at risk (see, e.g., Barnett, 1998; Weissberg, 2000). However, if an individual begins to show early signs of a condition like Type II diabetes or if the disease becomes a full-blown case, the common medical practice is to manage the condition (i.e., preventing it from becoming worse or causing additional illness). Mental illness, too, shows signs of being a chronic condition, and it remains diagnosed as a syndrome without any evidence of it being a disease in the classic sense of the definition (i.e., underlying lesion or specific pathophysiology). Although mental illness prevention efforts have shown good efficacy (e.g., Mendelson & Munoz, 2006), all prevention efforts are aimed at reducing cases of mental illness and have yet to turn any attention to investigating whether those interventions do the "yeoman's service" of promoting flourishing as well as preventing mental illness.

Mental Health: Identifying What People Say They Have Wanted All Along

Until recently, mental health remained undefined, unmeasured, and therefore unrecognized at the level of governments and nongovernmental organizations. In 1999, the Surgeon General, then David Satcher, conceived of mental health as "a state of successful performance of mental function, resulting in productive activities, fulfilling relationships with people, and the ability to adapt to change and to cope with adversity" (U.S. Public Health Service, 1999, p. 4). In 2004, the World Health Organization published a historic first report on mental health promotion,

conceptualizing mental health as not merely the absence of mental illness but the presence of “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” (World Health Organization, 2004, p. 12).

These definitions affirm the existing behavioral and social scientific vision of mental health as not merely the absence of mental illness but the presence of something positive (e.g., Jahoda, 1958). Social and psychological scientists have been studying something positive in the domain of subjective well-being—individuals’ evaluations and judgment of their own lives—for about 50 years (Keyes, 2006b). This research has yielded as many as 13 specific dimensions of well-being in the U.S. population. When factor analyzed, studies show that the manifold scales measuring subjective well-being represent the latent structure of hedonic well-being (i.e., positive emotions toward one’s life) or eudaimonic well-being (i.e., positive psychological and social functioning in life; see Keyes, Shmotkin, & Ryff, 2002; McGregor & Little, 1998; Ryan & Deci, 2001). It is noteworthy that subjective well-being research unintentionally yielded clusters of mental health symptoms that mirror the cluster of symptoms used in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; American Psychiatric Association, 2000) to diagnose MDE. In the same way that depression requires

symptoms of *an*-hedonia, mental health consists of symptoms of hedonia such as emotional vitality and positive feelings toward one’s life. In the same way that major depression consists of symptoms of *mal*-functioning, mental health consists of symptoms of positive functioning.

Table 1 presents clusters of symptoms of mental health as flourishing. The diagnosis of states of mental health was modeled after the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM-III-R*; American Psychiatric Association, 1987) approach to diagnosing MDE (Keyes, 2002). Each measure of subjective well-being is considered a symptom insofar as it represents an outward sign of an unobservable state. In the absence of specific diagnostic tests, underlying conditions must be inferred from symptoms (or items). Mental health as well as mental illnesses lack specific diagnostic tests and remain identifiable only as collections of symptoms and outward signs (i.e., syndromes) of the underlying state or condition. To be diagnosed as flourishing in life, individuals must exhibit high levels on at least one measure of hedonic well-being and high levels on at least six measures of positive functioning. Individuals who exhibit low levels on at least one measure of hedonic well-being and low levels on at least six measures of positive functioning are diagnosed as languishing in life. Adults who are moderately mentally healthy do not fit the criteria for either flourishing or languishing in life. A continuous assessment sums all

Table 1
Factors and 13 Dimensions Reflecting Mental Health as Flourishing

Dimension	Definition
Positive emotions (i.e., emotional well-being)	
Positive affect	Regularly cheerful, interested in life, in good spirits, happy, calm and peaceful, full of life.
Avowed quality of life	Mostly or highly satisfied with life overall or in domains of life.
Positive psychological functioning (i.e., psychological well-being)	
Self-acceptance	Holds positive attitudes toward self, acknowledges, likes most parts of self, personality. Seeks challenge, has insight into own potential, feels a sense of continued development.
Personal growth	
Purpose in life	Finds own life has a direction and meaning.
Environmental mastery	Exercises ability to select, manage, and mold personal environs to suit needs.
Autonomy	Is guided by own, socially accepted, internal standards and values.
Positive relations with others	Has, or can form, warm, trusting personal relationships
Positive social functioning (i.e., social well-being)	
Social acceptance	Holds positive attitudes toward, acknowledges, and is accepting of human differences. Believes people, groups, and society have potential and can evolve or grow positively.
Social actualization	
Social contribution	Sees own daily activities as useful to and valued by society and others.
Social coherence	Interested in society and social life and finds them meaningful and somewhat intelligible.
Social integration	A sense of belonging to, and comfort and support from, a community.

Note. The 13 dimensions are from Keyes (2005b, Table 1, p. 541).

measures of mental health that are coded into 10-point ranges after the Global Assessment of Functioning approach in the *DSM-III-R*. For reasons reviewed by Kessler (2002) in the domain of psychopathology, I have used—and would recommend that others use—both the categorical and continuous assessment for mental health, because each approach provides valuable information and to see whether results and conclusions vary by each approach.

Findings reviewed next are from several published articles that analyzed data from the MacArthur Foundation's Midlife in the United States (MIDUS) survey (Brim, Ryff, & Kessler, 2004). This survey was a random-digit-dialing sample of noninstitutionalized English-speaking adults between the ages of 25 and 74 living in the 48 contiguous states, whose household included at least one telephone. The telephone survey and mailed questionnaires were conducted in 1995. The MIDUS used *DSM-III-R* criteria to diagnose four mental disorders (i.e., MDE, panic disorder, generalized anxiety disorder, and alcohol dependence), which were operationalized by the Composite International Diagnostic Interview Short Form scales (see Kessler, Andrews, Mroczek, Ustun, & Wittchen, 1998).

Mental Health: It Is More Than the Absence of Mental Illness

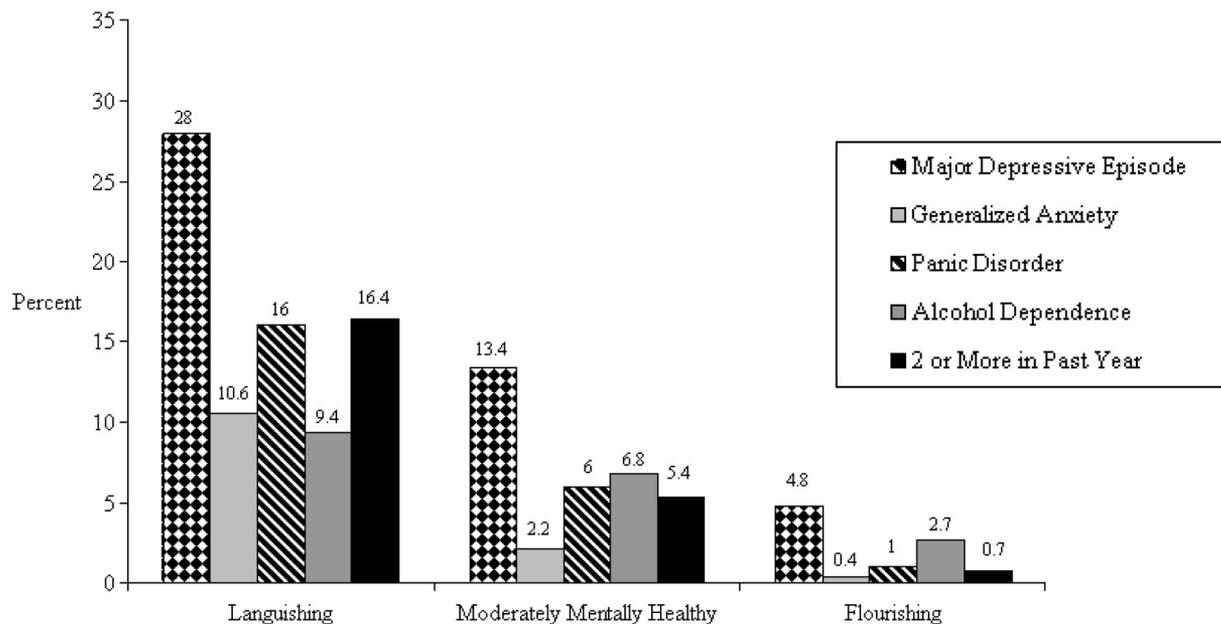
Confirmatory factor analysis was used to test the theory that the MIDUS measures of mental health and mental

illness belong to two latent continua. Three scales served as indicators of mental health (Keyes, 1998): the summed scale of emotional well-being (i.e., single item of satisfaction plus scale of positive affect), the summed scale of psychological well-being (i.e., six scales summed together), and the summed scale of social well-being (i.e., the five scales summed together). Four summary measures served as indicators of mental illness as operationalized as the number of symptoms of MDE, generalized anxiety disorder, panic disorder, and alcohol dependence. Two competing theories—the single-factor and the two-factor model—were tested. The single-factor model hypothesizes that the measures of mental health and mental illness reflect a single latent factor, support for which would indicate that the absence of mental illness implies the presence of mental health. The two-factor model hypothesizes that the measures of mental illness represent the latent factor of mental health that is distinct from, but correlated with, the latent factor of mental illness that is represented by the measures of mental illness. The data strongly support the two-factor model, which was a nearly perfect fitting model to the MIDUS data (Keyes, 2005b).

The latent factor of mental illness correlated $-.53$ with the latent factor of mental health. Although there is a tendency for mental health to improve as mental illness symptoms decrease, this connection is relatively modest. Figure 1 presents the cross-sectional, unadjusted risk of the

Figure 1

The Association of DSM-III-R 12-Month Mental Disorders With Mental Health Status for Adults in the MacArthur Foundation's MIDUS Survey



Note. Data are from Keyes (2005b, Table 4, p. 544). *DSM-III-R* = *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; American Psychiatric Association, 1987); MIDUS = Midlife in the United States.

12-month mental disorders by level of mental health. Languishing adults reported the highest prevalence of any of the four mental disorders as well as the highest prevalence of reporting two or more mental disorders during the past year. In contrast, flourishing individuals reported the lowest prevalence of any of the four 12-month mental disorders or their comorbidity. Compared with languishing or flourishing, moderately mentally healthy adults were at intermediate risk of any of the mental disorders or two or more mental disorders during the past year (Keyes, 2005a). The modest correlation between the latent continua reflects the tendency for the risk of mental illness to increase as mental health decreases. For example, the 12-month risk of MDE is over five times greater for languishing than flourishing adults.

Support for the two-factor model provides the strongest scientific evidence to date in support of the complete health approach to mental health. That is, the evidence indicates that the absence of mental illness does not imply the presence of mental health, and the absence of mental health does not imply the presence of mental illness. Thus, neither the pathogenic nor salutogenic approaches alone accurately describe the mental health of a population. Rather, mental health is a complete state that is best studied though the combined assessments of mental health with mental illnesses, as shown in Table 2.

Complete mental health, in Table 2, is a state in which individuals are free of mental illness and they are flourishing. Of course, flourishing may sometimes occur with an episode of mental illness, and moderate mental health and languishing can both occur with and without a mental illness. In articles published to date, individuals with a mental illness who were moderately mentally healthy or flourishing were collapsed into one group, because few flourishing individuals reported an episode of mental illness, and pooling these groups did not affect the results.

Flourishing Is Good for People and Society

Research has supported the hypothesis that anything less than complete mental health results in increased impairment and disability (Keyes, 2002, 2004, 2005a, 2005b).

Adults who were diagnosed as completely mentally healthy functioned superior to all others in terms of the fewest workdays missed, fewest half-day or less cutbacks of work, lowest level of health limitations of activities of daily living, the fewest chronic physical diseases and conditions, the lowest health care utilization, and the highest levels of psychosocial functioning. In terms of psychosocial functioning, this meant that completely mentally healthy adults reported the lowest level of perceived helplessness (e.g., low perceived control in life), the highest level of functional goals (e.g., knowing what they want from life), the highest level of self-reported resilience (e.g., learning from adversities), and the highest level of intimacy (e.g., feeling very close with family and friends). In terms of all of these measures, completely mentally healthy adults functioned better than adults with moderate mental health, who in turn functioned better than adults who were languishing.

Adults with a mental illness who also had either moderate mental health or flourishing reported more workdays missed or more work cutbacks than languishing adults (Keyes, 2004). However, languishing adults reported the same level of health limitations of daily living and worse levels of psychosocial functioning than adults with a mental illness who also had moderate mental health or flourishing. Individuals who were completely mentally ill—that is, languishing and one or more of the mental disorders—functioned worse than all others on every criterion. In general, adults with a mental illness who also had either moderate mental health or flourishing functioned no worse than adults who were languishing and did not have a mental disorder. Thus, mental illness that is combined with languishing is more dysfunctional than the situation in which a mental illness occurs in the context of moderate mental health or flourishing.

The complete mental health diagnostic states have been shown to be independent risk factors for CVD (Keyes, 2004). Keyes's (2004) study focused on the combination of the categorical diagnosis of mental health with MDE, because the latter has been shown to be a risk factor for heart and arterial diseases. The unadjusted prevalence of any CVD was 8% among completely mentally healthy adults, compared with 12% of adults with moderate mental health,

Table 2
Diagnostic Categories of the Complete Mental Health Model

DSM-III-R 12-month mental illness diagnosis	Mental health diagnosis		
	Languishing	Moderately mentally healthy	Flourishing
No	Languishing	Moderate mental health	Flourishing: Complete mental health
Yes	Mental illness and languishing	Mental illness and moderately mentally healthy	Mental illness and flourishing

Note. DSM-III-R = *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; American Psychiatric Association, 1987).

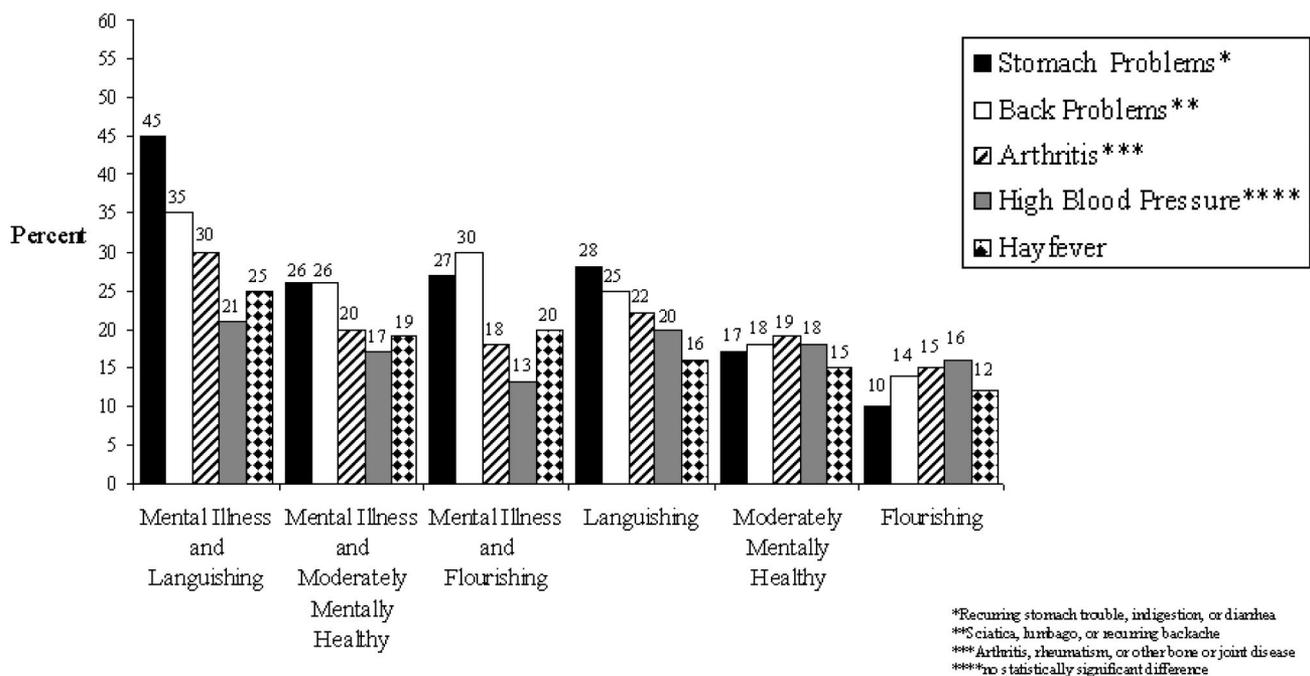
12% of adults who were languishing, and 13% of adults with “pure” depression (i.e., had MDE but also fit the criteria for moderate mental health or flourishing). Among adults who were languishing and had an episode of major depression, the prevalence of any CVD was 19%. In multivariate analyses, completely mentally healthy adults had the lowest risk of a CVD. In fact, adults who fit the criteria for anything less than complete mental health had levels of relative risk for CVD that were comparable with the relative risk associated with diabetes, smoking cigarettes, and lack of physical exercise.

A recent article (Keyes, 2005a) investigated the association of the complete mental health diagnoses with chronic physical conditions with age. The MIDUS study included self-reported assessments of 27 chronic physical health conditions adapted from the Medical Outcomes Study. The complete mental health diagnosis was associated with 85% of the chronic physical conditions measured in the MIDUS study. Figure 2 shows the unadjusted prevalence of the five most prevalent chronic physical conditions. Here, the mental health diagnoses were associated with four of the five chronic conditions (note that this article focused only on major depressive disorder as the form of mental illness). The pattern of the relationship shown in Figure 2 was the same with all other chronic conditions. That is, the prevalence of chronic physical

conditions was highest among adults who are languishing and had an episode of major depression and lowest among completely mentally healthy adults. The prevalence of chronic physical conditions was slightly higher among moderately mentally healthy adults than completely mentally healthy adults, whereas languishing adults reported even more chronic conditions than adults with moderate mental health.

Overall, adults with major depression and languishing had an average of 4.5 chronic conditions (Keyes, 2005a). Adults with depression who also had moderate mental health or flourishing had an average of 3.1 chronic conditions, which was the same as adults who were languishing but without any mental illness. Moderately mentally healthy adults without any mental illness had an average of 2.1 chronic conditions, compared with adults with complete mental health who had an average of 1.5 chronic conditions. Multivariate regression analyses confirmed that, when compared against completely mentally healthy adults, chronic physical conditions increased as the level of mental health decreased. It is noteworthy that mental health status was a significant predictor of chronic physical conditions even after adjustment for the usual sociodemographic variables as well as body mass index, diabetes status, smoking status, and level of physical exercise.

Figure 2
Unadjusted Prevalence of the Top Five Chronic Physical Conditions in the MIDUS Study by Complete Mental Health Diagnosis



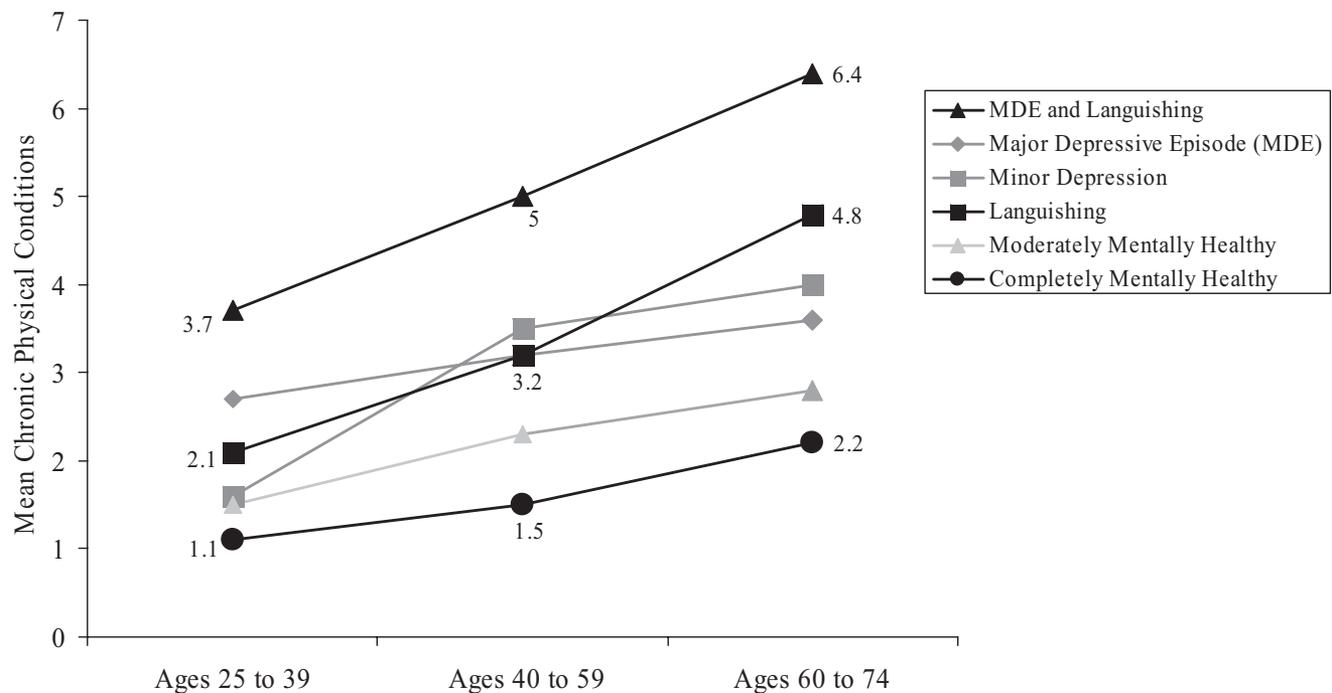
Note. Data are from Keyes (2005a, Table 1, p. 96). MIDUS = Midlife in the United States survey by the MacArthur Foundation.

Multivariate analyses also revealed statistically significant interactions of age with two of the complete mental health diagnostic states (Keyes, 2005a). Although chronic physical conditions increased with age, Figure 3 portrays the two interaction effects of pure languishing and languishing with an episode of major depression by age. Young languishing adults have an average of one more chronic condition than young flourishing adults, midlife languishing adults reported an average of about 1.7 more conditions than flourishing midlife adults, and languishing older adults have an average of 2.6 more chronic conditions than flourishing older adults. Similarly, young languishing adults with MDE reported an average of 2.6 more chronic conditions than flourishing young adults, midlife languishing adults with MDE have an average of 3.5 more conditions than flourishing midlife adults, and languishing older adults who also had MDE have an average of 4.2 more chronic conditions than flourishing older adults. In short, languishing with, and languishing without, a mental illness is associated with increasingly larger amounts of chronic physical disease with age.

Results from Keyes's (2005a) study suggest two noteworthy findings. First, adults who were completely mentally healthy had the lowest number of chronic physical

conditions at all ages. Second, the youngest adults who were languishing had the same number of chronic physical conditions as older flourishing adults. Younger languishing adults who also had MDE had 1.5 more chronic conditions than older flourishing adults. In other words, the absence of mental health—whether it is pure languishing or languishing combined with a mental illness—appears to compound the risk of chronic physical disease with age. In turn, we (Keyes & Grzywacz, 2005) have found health care utilization to be lowest among adults who are flourishing. Rates of overnight hospitalizations over the past year, outpatient medical visits over the past year, and number of prescription drugs during the past 30 days were lowest among adults who were flourishing and physically healthy, followed by adults who were either flourishing but had physical illness conditions or adults who were not flourishing but were physically healthy (Keyes & Grzywacz, 2005). In short, complete mental health—that is, flourishing and the absence of mental illness—should be central to any national debate about health care coverage and costs. Rather than focusing all discussions around health care delivery and insurance, the nation must also increase and protect the number of individuals who are healthy, driving down the need for health care.

Figure 3
Mean Number of Chronic Physical Diseases (27 Possible) by Age Group and Complete Mental Health Diagnosis



Note. Adapted from Figure 1 in "Chronic Physical Conditions and Aging: Is Mental Health a Potential Protective Factor?" by C. L. M. Keyes, 2005a, *Ageing International*, 30, p. 99. Copyright 2005 by Transaction Publishers. Adapted with permission.

Complete Mental Health: How Much Is Out There?

Evidence to date suggests that flourishing, a central component of complete mental health, is a desirable condition that any community, corporation, or government would want to protect or promote in its citizens. The United States aspires to mental health but has not directly promoted it. The U.S. government has redistributed over 50 years of taxpayer's money toward psychopathology research and services through the NIMH as well as the Substance Abuse and Mental Health Services Administration. What have citizens gained from all of this spending? How much of the adult population is mentally healthy?

Figure 4 presents the point prevalence estimates previously reported in Keyes (2005b) with two exceptions. First, Figure 4 reports the prevalence of the relatively rare but important group of adults who, despite flourishing, reported at least one or more mental disorders. Second, Figure 4 also contains the ideal distribution of the various categories of mental health and illness in the population. Although arbitrary, this ideal distribution reflects a tenet that any country purporting to value and promote health should create a skewed distribution in which the largest group of people are flourishing.

If "almost there" is good enough, the current approach to national mental health is succeeding, because approximately one half of the adult population is moderately mentally healthy. However, because genuine mental health should be the goal, the current approach to national mental health is a failure, because only 17% of adults are completely mentally healthy. Worse yet, 10% of adults are

mentally unhealthy, as they are languishing and do not fit the criteria for any of the four mental disorders (and they averaged about one symptom of mental illness, suggesting that languishers may not be subsyndromal). In addition, 23% of adults fit the criteria for one or more of the four mental disorders measured in the MIDUS. Of that 23%, 7% had a mental illness and fit the criteria for languishing, meaning individuals not only had an episode of mental illness along with the absence of mental health (i.e., languishing). Of the 23% with a mental illness, 14.5% had moderate mental health and 1.5% were flourishing (Keyes, 2005b).

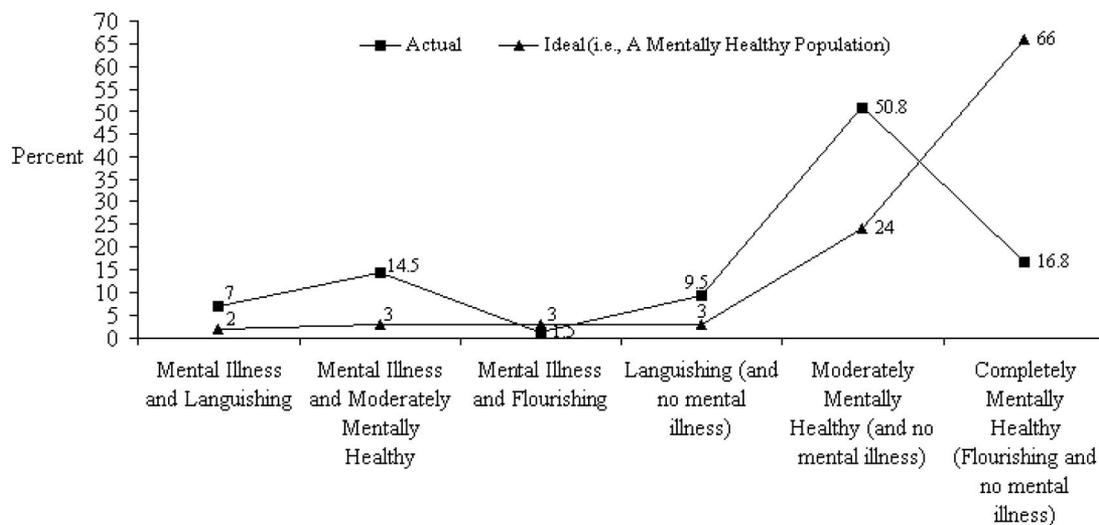
The disparities in Figure 4 between the actual and ideal point prevalence provide strong justification for continued national investment in the reduction of mental illness. However, this disparity also suggests the need for new investments in the promotion of mental health as flourishing. The size of the adult population with moderate mental health and its "proximity" to being completely mentally healthy suggests one of the most potentially cost-effective leverage points for increasing national mental health. Evidence reviewed earlier suggests that reducing the size of the moderate mental health group by increasing its mental health could substantially reduce direct (e.g., health care usage) and indirect (e.g., workdays missed) costs.

Epidemiology of Complete Mental Health: Who Has It?

There has been much less research on the epidemiology of complete mental health than the measurement and utility of

Figure 4

Point Prevalence of Complete Mental Health in the U.S. Adult Population in 1995 (Ages 25–74) Compared With an Idealized View of the Distribution of Complete Mental Health



Note. The "Actual" data are from Keyes (2005b).

complete mental health.² Put simply, why investigate who is flourishing, and why proclaim a movement for a positive approach to mental health, without knowing whether it is a valuable condition for self and society? Compared with five years ago, I am now convinced of the utility of complete mental health (i.e., to use taxpayers' money to fund research and interventions to create more than the absence of mental illness). Thus, I would like to conclude this article by beginning the epidemiological research on complete mental health and presenting new analyses using the MIDUS data.

Here, I investigate the gender, race, and educational differences in complete mental health. The results reported here focus only on comparison of non-Hispanic Caucasians (Whites) and African Americans (Blacks), using the continuous assessment of complete mental health described earlier in the review of the results from Keyes's (2005b) study (i.e., which included the four mental disorders measured with the Composite International Diagnostic Interview Short Form in the MIDUS). Race, gender, and education are targeted here because of the acute national interest in health disparities due to social inequality and discrimination.

As a reflection of socioeconomic standing, educational differences in many mental disorders reflect a gradient effect such that rates of mental illness decrease linearly with each increase in educational attainment (see, e.g., Eaton & Muntaner, 1999). Similarly, research on gender and mental illness fits the disparity hypothesis, namely, that women suffer higher rates of internalizing disorders such as mood and anxiety disorders (although men suffer higher rates of externalizing disorders; see Kessler, 2006; Rosenfield, 1999). Because three of the four mental disorders measured in the MIDUS are internalizing disorders, this past research leads to the hypothesis that individuals with greater social advantages, namely men and those with more education, should be more likely to have complete mental health.

In turn, the literature on race and mental illness presents a paradox insofar as rates of common mental disorders are not higher in the group with greater inequality and discrimination. That is, rates of substance, mood, and anxiety disorders are either lower in Blacks or the same between Blacks and Whites (see Williams & Harris-Reid, 1999). In turn, racial-ethnic differences in levels of the six scales of psychological well-being—which form part of the diagnostic battery of flourishing—revealed that Blacks reported higher levels than Whites on all six scales before any covariates were introduced into the model (Ryff, Keyes, & Hughes, 2003). After controlling for education, income, a host of other demographics variables, and perceived discrimination, the Black advantage over Whites in psychological well-being increased. Because psychological well-being improved after controlling for discrimination, Ryff et al.'s (2003) findings suggest that Blacks would have an even better profile of psychological well-being than Whites were it not for the fact that Blacks experienced more discrimination than Whites.³ This, therefore, leads to

the hypothesis investigated here that Blacks should be more likely than Whites to have complete mental health.

Mean-level differences of complete mental health were investigated using the analysis of variance by race (Black, White), gender (male, female), education (less than 11 years, 12 years or GED, 13–15 years, and 16 or more years of education), and the covariate of total household income. All three main effects were statistically significant: race, $F(1, 2771) = 6.9, p < .009$; gender, $F(1, 2771) = 12.4, p < .001$; and education, $F(3, 2771) = 10.1, p < .001$, in addition to a statistically significant interaction of race and gender, $F(1, 2771) = 5.6, p < .02$. Figure 5 reveals the findings that support the socioeconomic hypothesis, namely, that level of overall mental health increases as years of education increase. Findings also support the hypothesized advantage of Blacks over Whites in complete mental health. On average, Blacks reported a higher level of overall mental health than Whites. Last, findings provide partial support for the hypothesized advantage of men over women in complete mental health. Although men generally reported a higher level of overall mental health than women, separate analyses of variance for Whites and Blacks reveal a gender gap only among Blacks, with Black men reporting higher overall mental health than Black women. White men and women reported the same level of overall mental health at all levels of education.

Discussion

Most documents that reflect the policy and programs regarding public health in the United States declare that it seeks to promote the population's health or create the conditions that enable health. Public health policy aspires to create health in the population but uses methods that direct almost all resources toward the understanding of panaceas for illness. The American roadmap to health is through illness, begging the following questions: Are Americans lost? Can they get there (i.e., health) from here (i.e., illness)? Findings summarized here suggest the nation is either lost or it mistakenly believes it can promote national mental health only by reducing mental illness.

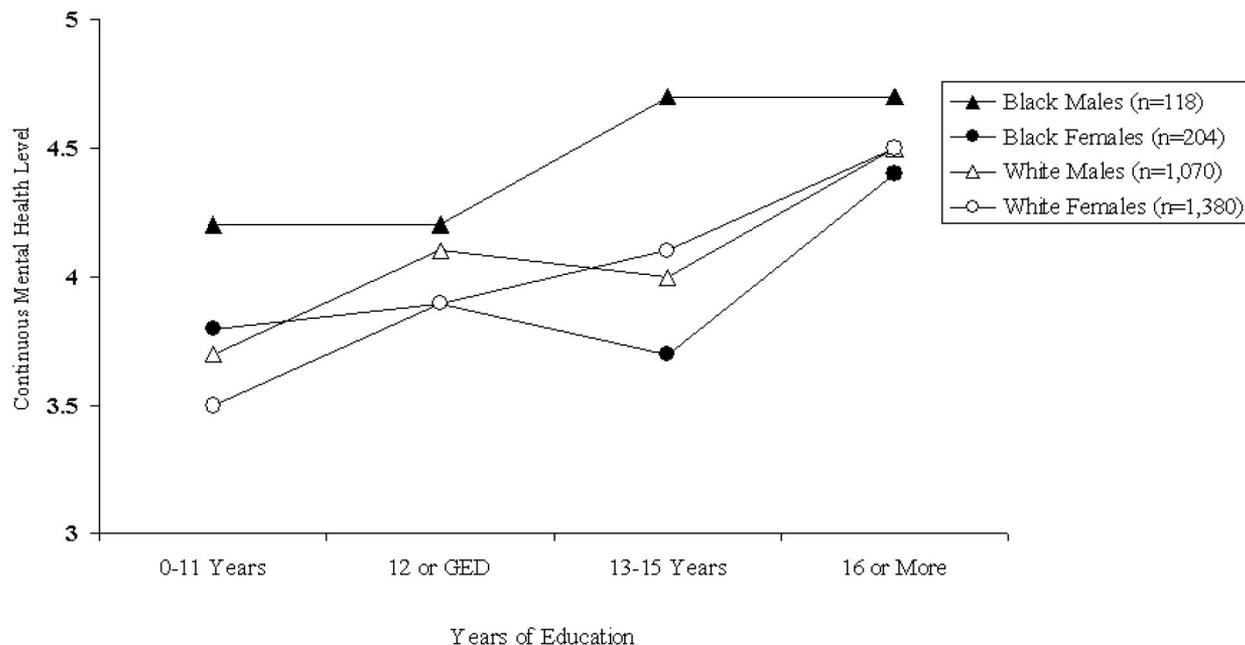
The United States has undergone the epidemiological transition in the causes of disease and death. The compression of morbidity envisioned by Fries (1980) and the vision of health for all people as initiated by the Declaration of Alma-Ata (World Health Organization, 1978) remain unrealized. The continued focus on diseases and disease risk

² The Keyes (2002) article reported the descriptive epidemiology of the complete mental health approach that combined only the diagnostic information about 12-month MDE with the mental health assessment. Results show that male, married, older, and more educated adults were more likely to be completely mentally healthy (i.e., flourishing and not depressed).

³ Whereas the mental health differences do not fit the predicted outcome of racial inequality, physical health differences fit the predicted outcome of racial inequality, with Blacks suffering higher rates of premature mortality and most chronic physical diseases than Whites (Williams, 1999). This situation may be best referred to as the *paradox of race and health*, which requires more research to better understand how Blacks are mentally but not physically resilient in the face of social inequalities.

Figure 5

Mean-Level Continuous Mental Health by Race, Gender, and Education, Controlling for Household Income, in the 1995 MIDUS Study



Note. $N = 2,772$ (sample weighted). MIDUS = Midlife in the United States survey by the MacArthur Foundation.

factors that constitute the leading causes of death is being met with the unanticipated consequences of increasing the number of years spent living with mental as well as physical disability. I concur with David Cutler's (2004) view, stated in *Your Money or Your Life: Strong Medicine for America's Health Care System*, that "a population that lives long but is in poor health is not (much) better off than one with a shorter but healthier life span" (p. 5). Indeed, health care problems once associated with old age are occurring at younger ages. Although industrialized nations can continue to increase life expectancy, achieving that goal will be more difficult, more costly, and will be valued by citizens only if those added years are accompanied by a sense of well-being and the absence of pain, disability, or dementia (Nusselder et al., 1996; Olshansky et al., 1991).

Health care in the 21st century United States must include an intensive effort to add healthy years to the years of life added in the 20th century. However, and despite established conceptions of health as more than the absence of disease, public health policy and evaluation of health programs are based on reduction of mortality and morbidity (Robine & Ritchie, 1991). The exclusion from policy and research of health and well-being—which some consider the counterdimension of disease and illness (Sullivan, 2003)—may explain why the health profile of the U.S. population is poor relative to other developed nations. Indeed, physical and psychiatric conditions frequently co-occur, and individuals without manifest signs of disease are

not "healthy" (Keyes, 2002). Policies that direct programmatic interventions that bring about reductions in illness and enhancements in mental as well as physical health are needed to reach a new vision in U.S. health care policy: the protection and promotion of health to increase disability-free and healthy life expectancy.

Toward that end, evidence is unequivocal that mental illness must receive equal attention as physical illness. The prevalence and toll of mental illness certainly argue for expanding the scope of mental illness research. Such evidence, however, can be construed to restrict rather than expand the scope of "the other side of the coin" of mental illness (i.e., mental health research). However, there are salient reasons for expanding the scope of clinical and epidemiological research to include mental health as something more than the absence of psychopathology. Evidence reviewed in this article suggests there are important reasons to expand society's understanding of the problems and challenges concerning the presence and the absence of mental health. Very few adults who are free of any 12-month mental disorder could be classified as genuinely mentally healthy. Less than 2 in 10 adults were completely mentally healthy as defined by freedom from an episode of mental illness over the past year and flourishing in life. Over 2 in 10 adults had some form of mental disorder, many cases of which were comorbid with languishing in life. About one half of the adult population between the

ages of 25 and 74 was moderately mentally healthy, and about 1 in 10 adults were languishing (Keyes, 2005b).

When compared with complete mental health, moderately mentally healthy and languishing adults exhibited substantial impairment. Languishing and moderate mental health are associated with high limitations of daily living, more reductions in work productivity due to cutbacks and lost days of work, more chronic physical disease, and poorer psychosocial functioning. Strikingly, functioning was considerably worse when languishing was “comorbid” with an episode of mental illness, and this group functioned markedly worse than adults with a mental illness who had moderate mental health or were flourishing. Thus, the mental health continuum also distinguishes level of impairment within the category of the mentally ill.

The review in this article suggests several conclusions. First, a dichotomous approach to the measurement of states of mental illness obscures the nature of mental illness and their comorbidities with chronic disease. Second, an expanded approach to the measurement of states of mental illness appears to clarify their comorbidities with chronic disease. Third, intermediate levels of mental health are different from mental illness as well as flourishing mental health. Fourth, reducing diagnosable mental illness does not necessarily increase mental health. Fifth, an expanded approach to conceptualization and measurement would appear to clarify the nature of mental illness and mental health particularly as it relates to a two-dimensional model of mental illness and mental health. Sixth, researchers cannot extrapolate from the corpus of findings from psychiatric epidemiology to assume they thereby know who is mentally healthy. Contrary to what was predicted from psychiatric epidemiology, new findings presented here reveal that White men are not mentally healthier than White women, and Blacks are mentally healthier than Whites.

Because of the limits of the research methodology presented here, which used the MIDUS cross-sectional study, there is much practical research to be done in the domain of mental health as flourishing and its promotion. In the realm of conception and measurement of mental health, are “symptoms” (i.e., indicators) missing from the current list? Could studies using latent taxometric techniques pinpoint the need for specific diagnostic thresholds for mental health (i.e., languishing, moderate mental health, and flourishing)? Future research should investigate the relationships of dysthymia, minor depression, and other subsyndromal forms of mental illness with languishing. Because this research should ultimately be translated into practice, future research should also translate the list of assessment criteria into expert clinical assessment to track patient outcomes and compare self-reports with clinical assessments. Clinically, research should investigate whether level of mental health moderates response to specific therapies in patients with a diagnosed mental illness. Although there is now evidence that the same model of mental health proposed here applies also to adolescents (Keyes, 2006a), much more research is needed to understand how mental health unfolds developmentally and over the lifespan, acting as protective (i.e., flourishing) and risk

(i.e., languishing and moderate mental health) factors within specific racial and ethnic subpopulations.

It is important to recognize that this is not the first time genuine mental health has been on the policy horizon in this country. Congress passed The National Mental Health Act of 1946, which earmarked funds for the creation of the NIMH. The joint commission on mental health and illness served as the advisory board for the creation of the future NIMH. This commission, chaired and dominated by psychiatrists, requested several reports to ascertain the mental health needs in the United States. The commission requested two separate reports on mental health, both of which reported on the status of theory and research on subjective well-being. The first publication was Marie Jahoda’s (1958) now seminal volume on positive mental health. This volume reviewed the personality and clinical psychology literatures regarding dimensions of psychological well-being (e.g., purpose in life, personal growth, and self-acceptance) that reflected aspects of eudaimonic stream of subjective well-being. The second volume, in terms of its publication, was Gurin, Veroff, and Feld’s (1960) book on the state of Americans’ mental health. This volume featured the hedonic stream of subjective well-being, focusing on individuals’ assessments of their satisfaction and happiness with life.

In the preface to Jahoda’s (1958) volume, Ewalt commented that

The behavioral scientists who have joined the mental health team and are making increasingly important contributions to the mental health movement have expressed dissatisfaction with a primary focus on “sick behavior.” They argue that a new and broader perspective is needed if interest in mental health, as a positive force, is to be made conceptually clear and practically useful. (p. ix)

Unfortunately, psychiatry pitted against mainstream social psychology in the mid-1940s gave way in title only to the use of *health* in the NIMH name. Then, as now, the NIMH is committed to the promotion of America’s mental health through the study of the etiology and treatment of mental illness. Although subjective well-being did not become part of this nation’s mental health agenda, the impetus to launch the NIMH may have been responsible for planting the seeds of the study of subjective well-being as it appears today in the traditions of eudaimonic and hedonic well-being (Keyes et al., 2002) and which now form the basis for the review of mental health in this article.

To paraphrase Albert Einstein, science and society cannot solve the mental health problems of today by using the same kind of thinking that was used when, I believe, science and society helped to create them. The transition from acute to chronic diseases requires a shift from, not toward, the language of “cures” and “eradication.” If it is broken, science and society may not be able to fix it, and refusal to turn some of this nation’s assets toward the promotion and maintenance of mental health may serve only to make matters worse. Medical leaders are calling for a shift toward prospective medicine, believing that the current system is too reactive and responds only when individuals are sick (Snyderman & Williams, 2003).

Among the many appealing aspects of a prospective approach to health care—mental or physical—is the objective of determining the earliest deviations from health (i.e., providing very early detection of disease onset) so as to intervene at the earliest stage and restore health rather than wait to manage chronic illness.

Institutions like the NIMH and the Substance Abuse and Mental Health Services Administration have an unwavering commitment to alleviate human suffering due to mental illness. However, all institutions must adapt and respond to change. This, I learned, during a recent visit to the nation's capital, taking refuge in the Thomas Jefferson Memorial. On a wall of the memorial lies a quote penned in a letter from Jefferson to Samuel Kercheval on July 12, 1816. This quote speaks to the role that mental health as flourishing should play in changing the health care institutions in the 21st century in the same way that disease and illness shaped the nation's institutions in the 19th and 20th centuries. I echo Jefferson, who said that

I am certainly not an advocate for frequent and untried changes. . . . I know also, that laws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths disclosed, and manners and opinions change with the change of circumstances, institutions must advance also, and keep pace with the times. We might as well require a man to wear still the coat which fitted him when a boy, as civilized society to remain ever under the regimen of their barbarous ancestors. (Peterson, 1975, p. 559)⁴

⁴ The complete letter and the quote can be found in Peterson (1975).

REFERENCES

- American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Angst, J. (1988). Clinical course of affective disorders. In T. Helgason & R. J. Daly (Eds.), *Depression illness: Prediction of course and outcome* (pp. 1–47). Berlin, Germany: Springer-Verlag.
- Antonovsky, A. (1979). *Health, stress, and coping*. San Francisco: Jossey-Bass.
- Barnett, W. S. (1998). Long-term cognitive and academic effects of early childhood education on children in poverty. *Preventive Medicine, 27*, 204–207.
- BlueCross and BlueShield. (2006). *National healthcare trends*. Retrieved July 31, 2006, from http://www.bcbs.com/mcrg/chap1/ch1_Slide_1.html
- Brim, O. G., Ryff, C. D., & Kessler, R. C. (Eds.). (2004). *How healthy are we? A national study of well-being at midlife*. Chicago: University of Chicago Press.
- Burke, K. C., Burke, J. D., Rae, D. S., & Regier, D. A. (1991). Comparing age at onset of major depression and other psychiatric disorders by birth cohorts in five U.S. community populations. *Archives of General Psychiatry, 48*, 789–795.
- Cross-National Collaborative Group. (1992). The changing rate of major depression: Cross-national comparisons. *Journal of the American Medical Association, 268*, 3098–3105.
- Cutler, D. M. (2004). *Your money or your life: Strong medicine for America's health care system*. New York: Oxford University Press.
- Eaton, W. W., & Muntaner, C. (1999). Socioeconomic stratification and mental disorder. In A. V. Horwitz & T. L. Scheid (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (pp. 259–283). New York: Cambridge University Press.
- Epel, E. S., Blackburn, E. H., Lin, J., Dhabhar, F. S., Adler, N. E., Morrow, J. D., & Cawthon, R. M. (2004). Accelerated telomere shortening in response to life stress. *Proceedings of the National Academy of Sciences, USA, 101*, 17312–17315.
- Fries, J. F. (1980). Aging, natural death, and the compression of morbidity. *New England Journal of Medicine, 303*, 130–135.
- Gonzales, L., Lewinsohn, P. M., & Clarke, G. (1985). Longitudinal follow-up of unipolar depressives: An investigation of predictors of relapse. *Journal of Consulting and Clinical Psychology, 53*, 461–469.
- Greenberg, P. E., Stiglin, L. E., Finkelstein, S. N., & Berndt, E. R. (1993). The economic burden of depression in 1990. *Journal of Clinical Psychiatry, 54*, 405–418.
- Gribble, J. N., & Preston, S. H. (Eds.). (1993). *The epidemiological transition: Policy and planning implications for developing countries*. Washington, DC: National Academies Press.
- Gurin, G., Veroff, J., & Feld, S. (1960). *Americans view their mental health*. New York: Basic Books.
- Hobbes, T. (1651). *Leviathan*. London: Andrew Crooke.
- Hollon, S. D., Thase, M. E., & Markowitz, J. C. (2002). Treatment and prevention of depression. *Psychological Science in the Public Interest, 2*, 39–76.
- Insel, T. R., & Scolnick, E. M. (2006). Cure therapeutics and strategic prevention: Raising the bar for mental health research. *Molecular Psychiatry, 11*, 11–17.
- Jahoda, M. (1958). *Current concepts of positive mental health*. New York: Basic Books.
- Keller, M. B., Shapiro, R. W., Lavori, P. W., & Wolfe, N. (1982). Relapse in major depressive disorder: Analysis with the life event table. *Archives of General Psychiatry, 39*, 911–915.
- Kessler, R. C. (2002). The categorical versus dimensional assessment controversy in the sociology of mental illness. *Journal of Health and Social Behavior, 43*, 171–188.
- Kessler, R. C. (2006). The epidemiology of depression among women. In C. L. M. Keyes & S. H. Goodman (Eds.), *Women and depression: A handbook for the social, behavioral, and biomedical sciences* (pp. 22–37). New York: Cambridge University Press.
- Kessler, R. C., Andrews, G., Mroczek, D., Ustun, B., Wittchen, H.-U. (1998). The World Health Organization Composite International Diagnostic Interview Short Form (CIDI-SF). *International Journal of Methods in Psychiatric Research, 7*, 171–185.
- 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. (2003). Complete mental health: An agenda for the 21st century. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 293–312). Washington, DC: American Psychological Association.
- Keyes, C. L. M. (2004). The nexus of cardiovascular disease and depression revisited: The complete mental health perspective and the moderating role of age and gender. *Aging and Mental Health, 8*, 266–274.
- Keyes, C. L. M. (2005a). Chronic physical conditions and aging: Is mental health a potential protective factor? *Ageing International, 30*, 88–104.
- Keyes, C. L. M. (2005b). 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. (2006a). Mental health in adolescence: Is America's youth flourishing? *American Journal of Orthopsychiatry, 76*, 395–402.
- Keyes, C. L. M. (2006b). Subjective well-being in mental health and human development research worldwide: An introduction. *Social Indicators Research, 77*, 1–10.
- Keyes, C. L. M., & Grzywacz, J. G. (2005). Health as a complete state: The added value in work performance and healthcare costs. *Journal of Occupational and Environmental Medicine, 47*, 523–532.
- Keyes, C. L. M., & Lopez, S. J. (2002). Toward a science of mental health: Positive directions in diagnosis and interventions. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 45–59). New York: Oxford University 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.
- Lamm, R. D., & Morreim, E. H. (2002). Health care: A Faustian bargain. *Society, 39*, 33–38.
- Lewinsohn, P. M., Hoberman, H. M., & Rosenbaum, M. (1988). A prospective study of risk factors for unipolar depression. *Journal of Abnormal Psychology, 97*, 251–264.
- Lewinsohn, P. M., Hops, H., Roberts, R., & Seeley, J. (1993). Adolescent psychopathology: I. Prevalence and incidence of depression and other DSM-III-R disorders in high school students. *Journal of Abnormal Psychology, 102*, 110–120.
- McEwen, B. S. (1998). Stress, adaptation, and disease: Allostasis and allostatic load. *Annals of the New York Academy of Sciences, 840*, 33–44.
- 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.
- Mendelson, T., & Munoz, R. F. (2006). Prevention of depression in women. In C. L. M. Keyes & S. H. Goodman (Eds.), *Women and depression: A handbook for the social, behavioral, and biomedical sciences* (pp. 450–478). New York: Cambridge University Press.
- Mercer, J., & Arlen, H. (1944). Accentuate the positive. On *Here come the waves* [Film musical score]. New York: MPL Communications.
- Murray, C. J. L., & Lopez, A. D. (Eds.). (1996). *The global burden of disease: A comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020*. Cambridge, MA: Harvard School of Public Health.
- Murray, C. J. L., & Lopez, A. D. (1997). Global mortality, disability, and the contribution of risk factors: Global burden of disease study. *Lancet, 349*, 1436–1442.
- The National Mental Health Act of 1946, Pub. L. No. 79–487, §§ 11, 538, 60 Stat. 425 (July 3, 1946).
- Nusselder, W. J., van der Velden, K., von Sonsbeek, J. L. A., Lenoir, M. E., & van den Bos, G. A. M. (1996). The elimination of selected chronic diseases in a population: The compression and expansion of morbidity. *American Journal of Public Health, 86*, 187–194.
- Olshansky, S. J., Rudberg, M. A., Carnes, B. A., Cassell, C. K., & Brody, J. A. (1991). Trading off longer life for worsening health. *Journal of Aging and Health, 3*, 194–216.
- O'Reardon, J. P., Brunswick, D. J., & Amsterdam, J. D. (2000). Treatment-resistant depression in the age of serotonin: Evolving strategies. *Current Opinion in Psychiatry, 13*, 93–98.
- Peterson, M. D. (Ed.). (1975). *The portable Thomas Jefferson*. New York: Penguin Books.
- Piccinelli, M., & Wilkinson, G. (1994). Outcome of depression in psychiatric settings. *British Journal of Psychiatry, 164*, 297–304.
- Ramana, R., Paykel, E. S., Cooper, Z., Hayhurst, H., Saxty, M., & Surtees, P. G. (1995). Remission and relapse in major depression: A two-year prospective follow-up study. *Psychological Medicine, 25*, 1161–1170.
- Reinhardt, U. E., Hussey, P. S., & Anderson, G. F. (2004). U.S. health care spending in an international context. *Health Affairs, 23*, 10–25.
- Robine, J. M., & Ritchie, K. (1991). Healthy life expectancy: Evaluation of global indicator of change in population health. *British Medical Journal, 302*, 457–460.
- Robins, L. N., & Regier, D. A. (Eds.). (1991). *Psychiatric disorders in America: The epidemiological catchment area study*. New York: Free Press.
- Rosenfield, S. (1999). Gender and mental health: Do women have more psychopathology, men more, or both the same (and why)? In A. V. Horwitz & T. L. Scheid (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (pp. 348–360). New York: Cambridge University Press.
- 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., Keyes, C. L. M., & Hughes, D. (2003). Status inequalities, perceived discrimination, and eudaimonic well-being: Do the challenges of minority life hone purpose and growth? *Journal of Health and Social Behavior, 44*, 275–291.
- Seligman, M. E. P. (1995). The effectiveness of psychotherapy: The consumer reports study. *American Psychologist, 50*, 965–974.
- Snyderman, R., & Williams, R. S. (2003). Prospective medicine: The next health care transformation. *Academic Medicine, 78*, 1079–1084.
- Stiles, P. (2005). *Is the American dream killing you? How the market rules our lives*. New York: Collins.
- Strümpfer, D. J. W. (1995). The origins of health and strength: From “salutogenesis” to “fortigenesis.” *South African Journal of Psychology, 25*, 81–89.
- Sullivan, M. (2003). The new subjective medicine: Taking the patient's point of view on health care and health. *Social Science and Medicine, 56*, 1595–1604.
- Szasz, T. S. (2001). *Pharmacocracy: Medicine and politics in America*. London: Praeger.
- Tudor, K. (1996). *Mental health promotion: Paradigms and practice*. London: Routledge.
- U.S. Public Health Service. (1999). *Mental health: A report of the Surgeon General*. Rockville, MD: Author.
- Weissberg, R. P. (2000). Improving the lives of millions of school children. *American Psychologist, 55*, 1360–1373.
- Wickramaratne, P. J., Weissman, M. M., Leaf, P. J., & Holford, T. R. (1989). Age, period and cohort effects on the risk of major depression: Results from five United States communities. *Journal of Clinical Epidemiology, 42*, 333–343.
- Williams, D. R. (1999). Race, socioeconomic status, and health: The added effects of racism and discrimination. *Annals of the New York Academy of Sciences, 896*, 173–188.
- Williams, D. R., & Harris-Reid, M. (1999). Race and mental health: Emerging patterns and promising approaches. In A. V. Horwitz & T. L. Scheid (Eds.), *A handbook for the study of mental health: Social contexts, theories, and systems* (pp. 295–314). New York: Cambridge University Press.
- World Health Organization. (1948). World Health Organization constitution. In *Basic documents*. Geneva: Author.
- World Health Organization. (1978). *Declaration of Alma-Ata: International conference on primary health care, Alma-Ata, USSR, 6–12 September 1978*. Retrieved February 14, 2006, from http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf
- World Health Organization. (2004). *Promoting mental health: Concepts, emerging evidence, practice* (Summary report). Geneva: Author.