

CHAPTER 4

Psychological Resilience in Adulthood and Later Life:

Implications for Health

Carol D. Ryff, Elliot M. Friedman, Jennifer A. Morozink,
and Vera Tsenkova

ABSTRACT

We define *psychological resilience* as the capacity to maintain, or regain, psychological well-being in the face of challenge. Elaborating on this definition, multiple dimensions of well-being are delineated and linked to the concept of resilience. We then illustrate the perspective with prior research on various challenges, including chronic experiences (e.g., caregiving) and acute events (e.g., relocation) of later life as well as disadvantaged socioeconomic status. Cumulative, life history approaches to resilience are examined with both quantitative and qualitative sources of data. The latter half of the chapter examines the links between psychological resilience and health drawing on recent findings, which demonstrate that higher well-being is predictive of better regulation of multiple biological systems, including in contexts of adversity. Given the protective influences of well-being, we summarize research intervention work designed to promote well-being among those suffering from psychological disorders. We conclude with directions for future research focused on the need to explicate diversity in human strengths as individuals confront adversity as well as the need to attend to the inherent interplay of positive and negative factors in understanding human resilience.

Understanding why some are able to function effectively in the face of adversity is a worthy scientific pursuit. Knowledge generated from such inquiry is fundamental to the development of effective prevention and health promotion strategies. We approach the topic of resilience from a psychological perspective and ask what implications it has for physical health. The first section offers a working definition of psychological resilience with emphasis on distinct components of well-being. Results from our prior studies of well-being vis-à-vis diverse life challenges are then described. Focusing on more recent work, we shift to how psychological resilience might influence health via intervening biological- and brain-based mechanisms. Given emerging evidence that resilience is beneficial for health, a critical question is whether it can be promoted among ever-larger segments of the population. We argue that it can, drawing on findings from clinical interventions and educational programs. We conclude with needed future directions to understand and promote psychological resilience.

DEFINING PSYCHOLOGICAL RESILIENCE

We know vastly more about human illness, dysfunction, and disease than about what it means to be healthy and well, including in contexts of significant life challenge. Nonetheless, the field of aging is unique for its long-standing interest in positive functioning, exemplified by decades of interest in successful aging (see Friedman & Ryff, in press-a). Resilience brings new directions to that tradition of work in that it requires a focus not only on the maintenance of capacities with aging, but also on recognition of the challenges confronted along the way. In this regard, we define *psychological resilience* as the capacity to maintain, or regain, psychological well-being in the face of challenge. The definition underscores wellness in the face of adversity—that is, the capacity to flourish, develop, and function effectively despite difficult circumstances or events.

The definition requires an explicit theoretical and empirical formulation of psychological well-being. Drawing on multiple literatures, including conceptions of ego development (Erikson), individuation (Jung), self-actualization (Maslow), maturity (Allport), meaning and life purpose (Frankl), the fully functioning person (Rogers), and positive mental health criteria (Jahoda), Ryff (1989) put forth six key dimensions of what constitutes well-being. These include *autonomy* (capacity for self-determination), *environmental mastery* (ability to manage one's surrounding world), *personal growth* (realization of potential), *positive relations with others* (high-quality relationships), *purpose in life* (meaning and direction in life), and *self-acceptance* (positive self-regard). Structured self-report procedures

were constructed to assess these six key dimensions. They have served as empirical indicators of who is able to function positively vis-à-vis various life challenges, that is, who is resilient. Other formulations of well-being deal with hedonic aspects, such as positive affect and life satisfaction (see Ryan & Deci, 2001, for a review). These are also included in some of our illustrative studies on succeeding texts.

Each of the aforementioned components constitutes human strengths that are important in the encounter with life difficulties and may be honed by adversity (see Ryff & Singer, 2003b). For example, self-acceptance is not about narcissistic self-love or superficial self-esteem, but involves a deep form of self-regard built on awareness of one's positive and negative attributes as well as coming to peace with both the triumphs and disappointments of one's life. Purpose in life involves the capacity to finding meaning and direction in one's life, *especially* in confrontations with life challenges. Meaning, as articulated by Frankl (1992), in fact, comes from the struggle with trial and tribulation. Similarly, personal growth is about the continual realization of one's talent and potential. Paradoxically, the development of new resources and strengths often occurs when individuals are confronted with adversity and even trauma. Environmental mastery pertains to proactive management of one's surroundings vis-à-vis the challenges of work and family life in middle adulthood as well as the challenges of aging in the later years. Autonomy addresses the capacity to march to one's own drummer, even when personal convictions may go against conventional beliefs; so doing underscores having the courage of one's own convictions. Positive relations with others involve having close connections, intimacy, and abiding love with others. Maintaining such relational ties typically involves resolution of difficulties about problematic issues. Thus, all aspects of well-being in the preceding formulation represent strengths that require active engagement with life, including its slings and arrows.

The life challenges we have investigated empirically have been wide ranging and include normative, expected transitions, such as becoming a parent, or community relocation in later life, as well as unexpected, unplanned events, such as having a child with mental retardation. Chronic difficulties, such as later life caregiving or living with an alcoholic have also been examined. Drawing on the growing literature on social inequalities, we have investigated the maintenance of well-being in the face of educational and economic disadvantage as well as minority group status. Many such inquiries have been carried with longitudinal studies, thereby allowing for assessments of change in well-being across time. The following section briefly reviews what has been learned about those who are, or are not, able to maintain high well-being in the face of these differing life challenges.

ILLUSTRATIVE PRIOR STUDIES: WELL-BEING VIS-À-VIS CHALLENGE

As emphasized earlier, life challenge is fundamental to our conception of resilience. The guiding model therefore is not about lives of smooth sailing where all goes well and one manages to evade adversity, but rather about successful engagement with difficult life events and experiences. Old age, in particular, is replete with challenges, which include acute health events, loss events (retirement, widowhood), chronic stress (caregiving), and required transitions (relocation). As such, later life is uniquely valuable for understanding how challenge is successfully negotiated. Central to our studies is the tracking of individuals over the course of these naturally occurring challenges and sometimes focusing on how they combine and accumulate over time.

Chronic and Acute Challenges of Aging

Aging brings increased health challenges (chronic conditions, symptoms) for most individuals, but many are able to maintain high levels of psychological well-being despite such changes. How do they do so? Our studies have shown that those who are able to do so make effective use of social comparison processes (Heidrich & Ryff, 1993b)—that is, they know when to compare themselves with others who are doing better (upward comparisons with role models of positive aging) as well as those who are doing poorly (downward comparisons that heighten awareness of one's own strengths) so as to benefit overall well-being. Similarly, well-being is enhanced among older adults who are socially integrated (Heidrich & Ryff, 1993a), defined in terms of having meaningful roles, known reference groups, and clear normative guidelines for behavior.

Compared to growing health challenges of aging, community relocation in later life constitutes a discrete transition. For most elders, it involves a move from one's personal home to an apartment or retirement community. Relocation at any age is stressful, but in old age, it may also signal a loss of independence and, thus, be a move that is not embraced and may even be resisted. Our work on relocation among aging women, however, has shown that many fare well in the transition and even show gains in well-being from before to after the move. Psychological strategies are again relevant, such as the capacity to have a flexible self-concept, which allows one to downplay areas wherein one is doing poorly, while also elevate life domains in which one is doing well (Kling, Ryff, & Essex, 1997). Engaging in positive social comparisons as well as positive reflected appraisals (perceiving that one is viewed favorably by significant others) also benefits psychological well-being following relocation (Kwan, Love, Ryff, & Essex, 2003).

We have contrasted the discrete challenges of community relocation with the challenges of life-long caregiving, related to being the parent of an adult child with mental retardation (Kling, Seltzer, & Ryff, 1997). The former is a more normative experience, in the sense that it is fairly common and may be anticipated. Parenting a child with developmental disabilities, in contrast, is nonnormative, in that it is atypical, unplanned, and long-term in duration. We examined cross-time changes in psychological well-being in both contexts. As predicted, more positive well-being profiles were evident among aging women going through community relocation, the normative transition, compared to managing the nonnormative responsibilities of life-long caregiving for a child with developmental disabilities. Further, those relocating were found to use more problem-focused coping strategies than the caregiving mothers, although the relationship between coping strategies and well-being were more strongly evident among those engaged in long-term caregiving. Thus, well-being was found to be more compromised by the nonnormative life challenge, but it was among such individuals that coping strategies were more strongly tied to well-being outcomes.

Challenges of Inequality and Cumulative Profiles of Adversity

Apart from proximal life experiences, other challenges emanate from individuals' location in the social structure. In this area, we have examined how one's position in the socioeconomic hierarchy, such as living with persistent educational or economic disadvantage, is linked to psychological well-being (Marmot, Ryff, Bumpass, Shipley, & Marks, 1997). On average, disadvantaged socioeconomic status (SES) is negatively associated with well-being, although there is wide variability within socioeconomic groups. Our more recent work shows this variation with SES groups to be consequential for biological risk factors (see Morozink, Friedman, Coe, & Ryff, 2010, which is elaborated in the following sections). We likewise investigated minority group status in another study and found, unexpectedly, that it was a *positive* predictor of most aspects of well-being (Ryff, Keyes, & Hughes, 2003) compared to majority group status. These results possibly reflected the idea of psychological strengths being honed in the face of race-related adversity. Nonetheless, perceptions of discrimination, particularly among women (majority and minority), were found to be significant negative predictors of well-being.

As lives are lived through time, individuals must contend with multiple unfolding challenges. Life history approaches are therefore needed to achieve a more comprehensive understanding of resilience. We adopted such a life history approach to illuminate the lives of women who experienced major depression at some point in adulthood, but subsequently regained high levels of well-being (Singer, Ryff, Carr, & Magee, 1998). Using longitudinal data from childhood

through midlife, we focused on cumulative profiles of adversity and advantage. Multiple life pathways were identified to account for the experience of major depression and recovery from it. For example, some women experienced adverse events in early life (e.g., parental alcoholism, death of parent, limited parental income or education), but these difficult beginnings were accompanied by later experiences of advantage (e.g., upward occupational mobility, close ties to a spouse). Other women experienced major adversity in their adult lives (e.g., unemployment, single parenting, spousal drinking, caregiving responsibilities), but such challenges were offset by good starting resources (e.g., high-level abilities in school, adequate parental income and education). Despite notable variation across these lives, our analyses distilled a limited number of prominent pathways of resilience among women who regained high well-being following an episode of depression. -

Qualitative Approaches to Resilience

The preceding studies use quantitative sources of data. A further way of enriching our understanding of human resilience involves use of qualitative data, as may be obtained in biographical studies. Such open-ended, unstructured, highly individualized accounts provide valuable insights as to how individuals make sense of their life difficulties and what they construe as key protective factors helping them to prevail. One such example pertains to the life of Mark Mathabane (1986), whom we examined in the context of racial disparities in health (Singer & Ryff, 1997). Mathabane spent the first 18 years of his life living under the apartheid regime in South Africa. His biography recounted early experiences of overwhelming degradation and difficulty, including having his parents subjected to late-night police raids, during which his father was humiliated and arrested. Other recollections pertained to searching for food in garbage dumps, the pain of malnutrition, and the violence of street gangs. Nonetheless, Mark Mathabane had the sustained benefit of an astonishingly hopeful, yet strict mother as well as a supportive grandmother. Both held unwavering commitments to education. School and athletic competition (tennis) ultimately served as his passport to freedom so that later he could write their story. The core of his resilience, Mathabane attributed to his mother's impassioned urge to keep fighting and to never succumb to poverty, fear, pain, or suffering. She instilled in him a conviction that power comes from transforming negative experience into the motivation to prevail in the face of staggering obstacles.

Moving from compelling single-case examples back to group-level research is difficult, although the richness of individual experience can be incorporated into quantitative research via the inclusion of qualitative, open-ended questions. This strategy was taken to probe the inner experience of a group of individuals designated as resilient by virtue of their having high psychological well-being

on the previously described quantitative scales, despite having low educational attainment (Markus, Ryff, Curhan, & Palmersheim, 2004). Our goal was to learn how such individuals explained their own well-being via responses to such questions as “What does it mean to you to have a good life?” or “What are some of the reasons your life has gone well?” or “What are your hopes for the future?” Compared with college-educated adults, whose answers underscored their own agency—that is, ways in which they influence, choose, plan, change, and are in control of their lives, high school-educated adults were less likely to focus on personal accomplishments and their own skills and abilities. Instead, they emphasized their families and communities, along with strong value commitments to uphold one’s responsibilities to others, even in the face of unavoidable difficulties.

Taken together, the preceding studies illustrate multiple angles on *resilience*, defined as the capacity to maintain or regain psychological well-being in the face of adversity. The challenges described differed on numerous dimensions—proximal events and transitions versus distal influences linked to one’s standing in the social hierarchy; normative, anticipated events versus nonnormative, unexpected challenges; discrete and short-term events in childhood, midlife, or old age versus long-term, chronic experience enduring over decades; and cumulative profiles of adversity versus advantage. Across this spectrum, the recurrent theme was that some individuals manage to show high well-being in the face of challenge, whereas others do not. Factors invoked to account for these favorable outcomes ranged from psychosocial strategies (social comparisons, reflected appraisals, coping styles) to receiving nurturing support from significant others, and one’s persistence and personal abilities. These studies did not yet ask whether such profiles of resilience were good for health. Such investigations constitute our more recent work on the topic of human resilience, which is examined in the following section.

RECENT STUDIES: RESILIENCE, BIOLOGY, AND HEALTH

Going Beyond Psychology

Why the extension to health, and in particular, to intervening biological mechanisms that may underlie resilience? A first answer is that restricting the earlier research exclusively to psychological factors, be they dimensions of well-being that define positive functioning, or psychological strategies thought to promote it, creates boundary problems. That is, where well-being ends and protective factors begin is complicated, given that operationalizations of guiding constructs may be blurred, despite well-intentioned efforts to articulate theoretical frameworks and develop valid and reliable assessment tools. Stated otherwise, explaining

psychological resilience by drawing on other psychological resources runs the risk of being vexingly insular.

The second, more compelling response for moving to biology and health is that so doing helps elevate subjective experience, particularly of the positive variety, to a realm that should be taken seriously as *something that matters*. That is, if people's phenomenological experiences about themselves and their lives can be shown to be linked in systematic ways to biological processes implicated in morbidity and mortality, then subjectivity becomes potentially as important as the causes of cancer or heart disease. Indeed, personal evaluations of how well one is doing in life become critical factors in understanding how disease and disability come about, or more precisely, how they might be avoided.

The third reason for linking resilience, defined as *psychological well-being* in the face of adversity, to biology and health is that it helps right the massive ship of scientific research funded by the National Institutes of Health (NIH). Although it was asserted more than 60 years ago by the World Health Organization (1948) that human health must be seen as *more than the absence of illness*, most of what is studied, or treated, under the rubric of health remains overwhelmingly focused on the negative (i.e., dysfunction, disability, disease). The central advantage of having well-conceptualized, empirically tractable indicators of human flourishing, illustrated by multiple aspects of well-being, is that they allow for mapping the physiological substrates of positive experience, which in turn, affords windows on human health as *health* rather than illness or disease (Ryff & Singer, 1998). Resilience ups the ante on this endeavor by bringing challenge into the formulation. On succeeding texts, we put forth two lines of work for understanding how well-being is linked to health. The first argues that positive psychological functioning is health-protective in general, and the second argues that well-being provides a buffer for health in the confrontation with challenge or adversity.

Proposition #1: Well-Being Predicts Better Biological Regulation

Initial efforts to link psychological well-being to biological factors addressed the simple question of whether higher levels of such factors as purpose in life, environmental mastery, and positive relations with others would predict lower levels of biological risk, such as decreased stress hormones and cardiovascular risk factors. Data from an initial sample of older women (Ryff, Singer, & Love, 2004) showed that those with higher levels of purpose in life, personal growth, and positive relations, in fact, showed lower cardiovascular risk (lower glycosylated hemoglobin, lower weight, lower waist-hip ratios, and higher "good" cholesterol (high-density lipoprotein [HDL]) as well as better neuroendocrine regulation (i.e., lower salivary cortisol throughout the day). Higher profiles on positive relations with others and purpose in life were also linked with lower inflammatory

factors—interleukin-6 (IL-6) and its soluble receptor (sIL-6r; Friedman, Hayney, Love, Singer, & Ryff, 2007).

In another sample of midlife adults, aspects of well-being were linked with salubrious brain activation patterns. Specifically, greater left (than right) prefrontal activation as associated with higher levels of multiple aspects of well-being, even after adjusting for positive affect and life satisfaction (Urry et al., 2004). This specific brain activation pattern has been linked to better health outcomes, including increased antibody response to flu vaccine (Rosenkranz et al., 2003). Using functional magnetic resonance imaging techniques, van Reekum et al. (2007) found that those with higher eudaimonic well-being showed better regulation of subcortical emotion centers (amygdala) by higher cortical brain regions (anterior cingulate cortex). Such individuals also showed reduced emotional responses to negative stimuli.

We note that the preceding findings coexist with a growing body of research documenting that higher hedonic well-being (happiness, positive affect, life satisfaction) is linked with lower morbidity, decreased health symptoms and pain, and increased longevity (Pressman & Cohen, 2005), resistance to illness (Cohen, Alper, Doyle, Treanor, & Turner, 2006), decreased stroke incidence (Ostir, Raji, Ottenbacher, Markides, & Goodwin, 2003), and better glycemic control (Feldman & Steptoe, 2003; Tsenkova, Love, Singer, & Ryff, 2008). Happiness over the workday has also been linked with lower blood pressure, lower heart rate, and reduced fibrinogen stress response (Steptoe & Wardle, 2005) as well as lower salivary cortisol and a reduced blood pressure response to laboratory stress (Steptoe, Gibson, Hamer, & Wardle, 2007).

Taken together, these studies document the biological and neurological underpinnings of positive psychological experience and, in some instances, show such patterns while controlling for negative affect; thus, helping to establish that the presence of the positive is more than the absence of the negative. The general direction of effect links subjectively experienced well-being to the maintenance of biological systems in normally functioning zones, although much remains unknown about the pervasiveness of these effects and on how they come about. The role of these linkages in preventing the emergence of disease processes remains largely uncharted territory.

Proposition #2: Well-Being as Protective in the Face of Adversity

Studying the individual under conditions of challenge is the more demanding test of whether experienced well-being is biologically protective. Moreover, such inquiry epitomizes the phenomenon of resilience by bringing into high relief the interplay of well-being, biology, and health under conditions of adversity. We note that in laboratory studies, often with animal models, mechanisms of resilience at

biological levels have been elaborated in terms of neurochemical response patterns to acute stress (Charney, 2004). Similarly, physiological "toughness" has been formulated in terms of a sympathetic nervous system arousal response, which combines strong, challenge-induced sympathetic nervous system activity with resistance to brain catecholamine depletion and suppression of pituitary adrenal-cortical responses (Dienstbier, 1989). Human research to date has less mechanistic detail, although it affords the singular advantage of being conducted with naturalistic, real-world challenges—that is, the actual life difficulties confronted by individuals as they move across the decades of adult life.

As described earlier in our initial studies of resilience, we have investigated the challenges of social inequality. Prior health research has repeatedly documented that lower socioeconomic standing contributes to greater risk of illness, disease, and disability, along with earlier mortality (Adler, Marmot, McEwen, & Stewart, 1999; Adler & Rehkopf, 2008; Alwin & Wray, 2005; Kawachi, Kennedy, & Wilkinson, 1999; Matthews & Gallo, 2011). Progress is being made in identifying the biological pathways through which these effects occur, including heightened cardiovascular risk, elevated neuroendocrine activity, and increased inflammatory processes (e.g., Friedman & Herd, 2010; Karlamangla et al., 2005; Lupien, King, Meaney, & McEwen, 2001; Steptoe, Owen, Kunz-Ebrecht, & Mohamed-Ali, 2002). Limited work, however, has addressed variability within socioeconomic groups—that is, the extent to which some at the low end of the SES hierarchy manage to evade adverse health outcomes.

We have approached this question with a focus on psychological well-being as a potential moderating factor that may offset, or protect against, ill health outcomes among educationally or economically disadvantaged individuals. One longitudinal investigation (Tsenkova, Love, Singer, & Ryff, 2007) based on a community sample of aging women found, as predicted, that those with higher levels of income had better glycemic control, measured in terms of glycosylated hemoglobin (HbA_{1c}). The effect was moderated by reported levels of well-being (purpose in life, personal growth, positive affect), but the direction of the interaction revealed an exacerbation of biological risk via the lack of well-being. That is, those with low levels of income had worse glycemic control when they also reported compromised levels of well-being.

Recent findings from a national sample of American adults, known as *Midlife in the United States* (MIDUS), document the hypothesized protective effects, albeit with a different biological factor, namely the inflammatory marker IL-6 (Morozink et al., 2010). Consistent with previous research, the first finding was that those with lower levels of education had higher levels of this inflammatory marker, net of numerous confounds (health behaviors, body mass index, chronic illnesses). However, reported well-being moderated this effect, such that

those with higher levels of environmental mastery, positive relations with others, purpose in life, self-acceptance, and positive affect showed less elevated levels of IL-6 compared to their same education peers who did not report higher levels of well-being. In fact, these individuals with only a high school education or less had IL-6 levels comparable to college-educated adults, thus underscoring that the maintenance of high levels of well-being in the face of socioeconomic adversity is linked with better inflammatory profiles. Our discussion of the findings emphasized the need to expand the analyses to include possible mediating processes, such as better health behaviors (diet, exercise, weight) and better glucocorticoid regulation.

An earlier study, also focused on the prediction of IL-6, had shown further evidence of compensatory processes at work (Friedman et al., 2005). Based on the aging women sample, those with the most elevated levels of IL-6 had both compromised well-being, measured in terms of positive relations with others, as well as poorer health behaviors, measured objectively in terms of sleep efficiency. However, interaction patterns revealed that good social relationships compensated for the adverse effects of poor sleep efficiency, and similarly that good sleep compensated for having poorer quality social relations, thus suggesting multiple causal pathways. Thus, although not focused on the challenges of socioeconomic disadvantage, this study underscored the protective effects of interpersonal well-being vis-à-vis aging sleep problems or good sleep efficiency vis-à-vis social relational difficulties. In the same longitudinal sample of aging women, Phelan, Love, Ryff, Brown, and Heidrich (2010) found two distinct cross-time patterns of sleep, measured in terms of the Pittsburgh Sleep Quality Index (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989): good but declining sleep quality over time and disrupted sleep quality over time. Higher psychological well-being (positive relations with others, environmental mastery, personal growth, purpose in life, self-acceptance), along with fewer illnesses and lower depression at baseline predicted reduced odds for membership in the disrupted sleep group.

One of the central challenges of aging is managing to maintain functional capacities, despite the accumulation of chronic conditions. Medical comorbidity characterizes most adults more than the age of 65 years (Friedman & Ryff, in press-a). Such normative health change also contributes to increased biological risk for subsequent morbidity and mortality. Using the MIDUS sample, we found that those with increased profiles of chronic conditions had higher levels of IL-6 and C-reactive protein (CRP; Friedman & Ryff, in press-b), but importantly these effects were moderated by reported levels of purpose in life and positive relations with others. That is, despite increased burden of disease, those with higher levels of life purpose and quality ties to others showed reduced increments in inflammatory markers compared to those with higher chronic conditions and low well-being.

Continuing with the challenges of aging, we conclude this section with findings from other investigators working with the Rush Memory and Aging Project, a longitudinal study of community-based adults in and around Chicago. Three studies from this investigation have underscored the protective influence of having a high level of purpose in life. Controlling for various confounds and including a prospective design, those with high purpose in life showed a significantly reduced risk of mortality 5 years later (Boyle, Barnes, Buchman, & Bennett, 2009) compared to those with lower levels of life purpose. Two subsequent studies reported that those with high levels of life purpose were half as likely to develop disability over a 6-year follow-up (Boyle, Buchman, & Bennett, 2010) and 2.5 times less likely to develop Alzheimer's disease over a 7-year follow-up compared with those having low levels of life purpose (Boyle, Buchman, Barnes, & Bennett, 2010).

Taken together, the previous summary of studies offer growing empirical evidence that psychological well-being affords protection against the health challenges that accompany aging as well as those that accompany social inequality. Findings vary with regard to which aspects of well-being convey such protective benefits, although the most consistent patterns have been observed for existential well-being (purpose in life) and interpersonal well-being (positive relations with others). The protective benefits obtained sometimes pertain to biological markers (cardiovascular risk factors, inflammatory processes) and in other cases to actual disease outcomes (Alzheimer's, mortality). In several instances, the obtained evidence has been based on longitudinal inquiry, thereby sharpening causal interpretations, and routinely, these studies have included extensive variables to control for confounding factors. Given the overall pattern of supportive evidence, it is relevant to ask whether well-being can be promoted. That is, can interventions be created that allow ever greater numbers of individuals to experience positive self-regard, good quality ties to others, and the sense that their lives are manageable, meaningful, and involve realization of personal potential.

PROMOTING WELL-BEING, NURTURING RESILIENCE

We have emphasized that the presence of well-being not only constitutes a desired phenomenological condition; it appears to be good for biological regulation and health, via brain and biochemical processes. Whether more individuals can participate in this salubrious interplay has been addressed by clinicians treating such disorders as depression and anxiety. "Well-being therapy," developed by Fava and colleagues (Fava, 1999; Fava, Rafanelli, Grandi, Conti, & Belluardo, 1998; Fava et al., 2005) is one such treatment. It is an intervention provided in combination with cognitive behavioral therapy and has been shown to prevent relapse over periods of 2 to 6 years. Fava and Ruini (2003) describe key components of the treatment, which

is based on Ryff's (1989) multidimensional model of psychological well-being. The goal of therapy is to improve patients' experiences of well-being in hopes of preventing relapse during the residual phase of mood and anxiety disorders—when major debilitating symptoms have subsided—but the patient remains at risk for falling back into the depressed or anxious condition. It is a short-term therapeutic strategy (8 weeks) that involves the use of structured diaries. Clients are required to record positive experiences from their daily lives, however fleeting. The focus in therapy sessions is on helping clients sustain such experiences rather than prematurely interrupt or curtail them by maladaptive cognitions. The fundamental idea behind the therapy is that recovery from mood and anxiety disorders requires the capacity to experience well-being (Fava, Ruini, & Belaise, 2007). Thus, eliminating symptoms of distress is, in and of itself, insufficient to achieve full recovery—one must also be able to participate in positive psychological experience.

Given the success of well-being therapy in preventing relapse of psychological disorders, it is now being adapted for use in preventive contexts as well. Ruini, Belaise, Brombin, Caffo, and Fava (2006), for example, have developed an intervention protocol, derived from the therapy that is used with students in school settings. Pilot research has shown that the intervention resulted in a reduction of psychological symptoms and an increase in psychological well-being. Adapting the strategy for other contexts and other age groups, including older adults in the community, seems a worthwhile endeavor. To the extent that individuals can cultivate skills for seeing and savoring the positive in their lives, much in the same way that people can learn to practice good nutrition, they would have tools at their disposal to draw on in times of distress or adversity. The prior literature on resilience, in both childhood (e.g., Luthar, Cicchetti, & Becker, 2000; Masten, 1999) and adulthood (Klohn, 1996; Reich, Zautra, & Hall, 2010; Ryff & Singer, 2003a; Staudinger, Marsiske, & Baltes, 1995), underscores the presence of certain protective factors, such as personality attributes, intellectual abilities, and social supports—many of which are discussed in other chapters in this volume. We have emphasized the importance of the subjective experience of multiple aspects of psychological well-being. Although some individuals tend to naturally possess these attributes and strengths, the prior intervention work suggests such resources can be cultivated, even among those who do not have natural tendencies to experience high well-being.

SUMMARY AND FUTURE DIRECTIONS

Our objective in this chapter has been to advance a formulation of resilience that involves the capacity to maintain or regain psychological well-being in the face of adversity. This is not the only way to conceptualize resilience, a uniquely rich

idea that has been probed with various formulations (see Zautra, Hall, & Murray, 2010). Guided by our chosen definition, we summarized findings from multiple investigations that were built around diverse types of challenge and focused on evidence of those who, indeed, evidenced high well-being in the confrontation with adversity. Our more recent studies extended this work to investigate whether it is beneficial for health by focusing on the neurological and biological concomitants of well-being as well as links to unfolding profiles of morbidity and mortality.

Much remains to be done to advance knowledge of human resilience, particularly as individuals grow old. The last decade of research reveals tremendous strides forward in generating theory-guided formulations of psychological and social resources and making them empirically tractable so that hypothesized benefits could be rigorously investigated. Although growing evidence documents the health benefits of positive psychosocial experience, along with increased specificity of neurobiological pathways, there is need to pursue more complex approaches that put different combinations of psychological characteristics together with their unfolding consequences for biology and health. Stated otherwise, the people we have studied to enrich our understanding of human strengths in the face of life's vicissitudes demonstrate enormous variety and undeniable uniqueness. As scientific endeavors strive to find common themes amidst such complexity, each advance comes with multiple layers of needed refinement.

For example, while positive functioning vis-à-vis challenge is an increasingly demonstrated empirical reality, even our own limited studies make clear that its form and shape is not uniform across people. There are multiple ways to be well in the face of adversity, and different people illustrate diverse combinations of strengths; some, for example, reflect more interpersonal connections, whereas others reveal greater intrapersonal resources (meaning, purpose, growth). To date, most research glosses over these variants, in part, because analyses tend to be based on variables taken one at a time rather than persons who are composites of many different characteristics. Thus, a worthy direction for future research is to enrich understanding of how different aspects of well-being, ensuing from diverse eudaimonic and hedonic formulations, come together in individual lives. Person-centered approaches (see Ryff, 2008) may be valuable for extracting such a more comprehensive and differentiated understanding of the overall picture of strengths in the face of challenge.

Similarly, because much prior health research has been focused on the negative—disease, disability, dysfunction, and related psychosocial vulnerabilities—efforts to create positive counterpoints run the risk of being exclusively focused on what is healthy, adaptive, and conducive to flourishing. Initial strides to give serious scientific attention to salubrious functioning required

documenting that the story was not just the “flip side” of the negative—that is, its unique effects on biology and health had to be demonstrated after adjusting for the negative. So doing served useful purposes, but has unfortunately kept the downsides and upsides of the human condition bifurcated rather than put together and integrated. Resilience research helps alleviate this problem by its dual emphasis on well-being vis-à-vis life adversity.

Additional work is needed, however, to capture the “complexities of valence” that define individual lives, such as the capacity to find happiness in a difficult and sometimes hostile world (Shmotkin, 2005). Moreover, psychological strengths themselves may co-occur with psychological vulnerabilities—purposeful lives often entail daunting pursuits and sometimes debilitating failure; rich human connections invariably involve warmth and love along with experiences of conflict and pain; personal growth and self-realization may be accompanied by angry resentments about unfair treatment along the way. As recognized by William James (1902/1958), not every soul comes with “a sky blue tint” (p.77); further, sometimes it is the most perceptive who see that “all natural goods perish, riches take wings, fame is a breadth; love is a cheat; youth and health and pleasure will vanish” (p.120).

The study of later life resilience is ideally suited to embrace these combined realities, coming as it does with undeniable loss and decline, and ultimately concluding with mortality. Even as death approaches, there is for many, a powerful urge to go on living. Tennyson gave voice to this courage in his poem *Ulysses* (Bloom, 2000), which ends with the famous lines

*Though much is taken, much abides; and though
We are not now that strength which in old days
Moved heaven and earth; that which we are, we are;
One equal temper of heroic hearts,
Made weak by time and fate, but strong in will
To strive, to see, to find, and not to yield. (p.78).*

The great irony is that the confrontation with challenge, combined with recognition of one’s mortality, may be what ultimately hones deep psychological strengths. That is, the source of meaning, purpose, and self-realization may paradoxically be in the difficulties individuals encounter on their life journeys. For those open to this possibility, the greatest understanding and insight may come at the end. To the extent that research on later life resilience brings these ever-richer human capacities to the light so that those younger can contemplate and learn from them, scholarly time and effort will have been well spent.

REFERENCES

- Adler, N. E., Marmot, M. G., McEwen, B. S., & Stewart, J. (1999). *Socioeconomic status and health in industrialized nations: Social, psychological, and biological pathways* (Vol. 896). New York: New York Academy of Sciences.
- Adler, N. E., & Rehkopf, D. H. (2008). U.S. disparities in health: Descriptions, causes, and mechanisms. *Annual Review of Public Health, 29*, 235–252. <http://dx.doi.org/10.1146/annurev.publhealth.29.020907.090852>
- Alwin, D. F., & Wray, L. A. (2005). A life-span developmental perspective on social status and health. *The Journals of Gerontology. Series B, Psychological Sciences and Social Sciences, 60* (Special Issue II), 7–14. doi:10.1093/geronb/60.Special_Issue_2.S7
- Bloom, H. (2000). *How to read and why*. New York: Scribner.
- Boyle, P. A., Barnes, L. L., Buchman, A. S., & Bennett, D. A. (2009). Purpose in life is associated with mortality among community-dwelling older persons. *Psychosomatic Medicine, 71*(5), 574–579. <http://dx.doi.org/10.1097/PSY.0b013e3181a5a7c0>
- Boyle, P. A., Buchman, A. S., Barnes, L. L., & Bennett, D. A. (2010). Effect of a purpose in life on risk of incident Alzheimer disease and mild cognitive impairment in community-dwelling older persons. *Archives of General Psychiatry, 67*(3), 304–310. <http://dx.doi.org/10.1001/archgenpsychiatry.2009.208>
- Boyle, P. A., Buchman, A. S., & Bennett, D. A. (2010). Purpose in life is associated with a reduced risk of incident disability among community-dwelling older persons. *The American Journal of Geriatric Psychiatry, 18*(12), 1093–1102.
- Buysse, D. J., Reynolds, C. F., III, Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research, 28*(2), 193–213. [http://dx.doi.org/10.1016/0165-1781\(89\)90047-4](http://dx.doi.org/10.1016/0165-1781(89)90047-4)
- Charney, D. S. (2004). Psychobiological mechanisms of resilience and vulnerability: Implications for successful adaptation to extreme stress. *The American Journal of Psychiatry, 161*(2), 195–216.
- Cohen, S., Alper, C. M., Doyle, W. J., Treanor, J. J., & Turner, R. B. (2006). Positive emotional style predicts resistance to illness after experimental exposure to rhinovirus or influenza A virus. *Psychosomatic Medicine, 68*(6), 809–815. <http://dx.doi.org/10.1097/01.psy.0000245867.92364.3c>
- Dienstbier, R. A. (1989). Arousal and physiological toughness: Implications for mental and physical health. *Psychological Review, 96*(1), 84–100. <http://dx.doi.org/10.1037/0033-295X.96.1.84>
- Fava, G. A. (1999). Well-being therapy: Conceptual and technical issues. *Psychotherapy and Psychosomatics, 68*(4), 171–179. <http://dx.doi.org/10.1159/000012329>
- Fava, G. A., Rafanelli, C., Grandi, S., Conti, S., & Belluardo, P. (1998). Prevention of recurrent depression with cognitive behavioral therapy: Preliminary findings. *Archives of General Psychiatry, 55*(9), 816–820. <http://dx.doi.org/10.1001/archpsyc.55.9.816>
- Fava, G. A., & Ruini, C. (2003). Development and characteristics of a well-being enhancing psychotherapeutic strategy: Well-being therapy. *Journal of Behavior Therapy and Experimental Psychiatry, 34*(1), 45–63. [http://dx.doi.org/10.1016/S0005-7916\(03\)00019-3](http://dx.doi.org/10.1016/S0005-7916(03)00019-3)

- Fava, G. A., Ruini, C., & Belaise, C. (2007). The concept of recovery in major depression. *Psychological Medicine*, 37(3), 307–317. <http://dx.doi.org/10.1017/s0033291706008981>
- Fava, G. A., Ruini, C., Rafanelli, C., Finos, L., Salmaso, L., Mangelli, L., et al. (2005). Well-being therapy of generalized anxiety disorder. *Psychotherapy and Psychosomatics*, 74(1), 26–30. <http://dx.doi.org/10.1159/000082023>
- Feldman, P. J., & Steptoe, A. (2003). Psychosocial and socioeconomic factors associated with glycated hemoglobin in nondiabetic middle-aged men and women. *Health Psychology*, 22(4), 398–405.
- Frankl, V. (1992). *Man's search for meaning* (4th ed.). Boston: Beacon Press.
- Friedman, E. M., Hayney, M. S., Love, G. D., Singer, B. H., & Ryff, C. D. (2007). Plasma interleukin-6 and soluble IL-6 receptors are associated with psychological well-being in aging women. *Health Psychology*, 26(3), 305–313. <http://dx.doi.org/10.1037/0278-6133.26.3.305>
- Friedman, E. M., Hayney, M. S., Love, G. D., Urry, H. L., Rosenkranz, M. A., Davidson, R. J., et al. (2005). Social relationships, sleep quality, and interleukin-6 in aging women. *Proceedings of the National Academy of Sciences of the United States of America*, 102(51), 18757–18762. <http://dx.doi.org/10.1073/pnas.0509281102>
- Friedman, E. M., & Herd, P. (2010). Income, education, and inflammation: Differential associations in a national probability sample (The MIDUS study). *Psychosomatic Medicine*, 72(3), 290–300. <http://dx.doi.org/10.1097/PSY.0b013e3181cfe4c2>
- Friedman, E. M., & Ryff, C. D. (in press-a). A biopsychosocial approach to positive aging. In S. K. Whitbourne & M. J. Sliwinski (Eds.), *Handbook of adult development and aging*. Oxford, United Kingdom: Blackwell Publishing.
- Friedman, E. M., & Ryff, C. D. (in press-b). Living well with medical co-morbidities: A biopsychosocial perspective. *Journals of Gerontology: Series B, Psychological Sciences and Social Sciences*.
- Heidrich, S. M., & Ryff, C. D. (1993a). Physical and mental health in later life: The self-system as mediator. *Psychology and Aging*, 8(3), 327–338. <http://dx.doi.org/10.1037/0882-7974.8.3.327>
- Heidrich, S. M., & Ryff, C. D. (1993b). The role of social comparisons processes in the psychological adaptation of elderly adults. *Journal of Gerontology*, 48(3), P127–P136. <http://dx.doi.org/10.1093/geronj/48.3.P127>
- James, W. (1958). *The varieties of religious experience*. New York: New American Library. (Original work published 1902)
- Karlamangla, A. S., Singer, B. H., Williams, D. R., Schwartz, J. E., Matthews, K. A., Kiefe, C. I., et al. (2005). Impact of socioeconomic status on longitudinal accumulation of cardiovascular risk in young adults: The CARDIA study (USA). *Social Science & Medicine*, 60(5), 999–1015. <http://dx.doi.org/10.1016/j.socscimed.2004.06.056>
- Kawachi, I., Kennedy, B. P., & Wilkinson, R. C. (1999). *The society and population health reader: Vol. 1: Income inequality and health*. New York: New Press.
- Kling, K. C., Ryff, C. D., & Essex, M. J. (1997). Adaptive changes in the self-concept during a life transition. *Personality & Social Psychology Bulletin*, 23(9), 981–990. <http://dx.doi.org/10.1177/0146167297239008>

- Kling, K. C., Seltzer, M. M., & Ryff, C. D. (1997). Distinctive late-life challenges: Implications for coping and well-being. *Psychology and Aging, 12*(2), 288–295. <http://dx.doi.org/10.1037/0882-7974.12.2.288>
- Klohnen, E. C. (1996). Conceptual analysis and measurement of the construct of ego-resiliency. *Journal of Personality and Social Psychology, 70*(5), 1067–1079. <http://dx.doi.org/10.1037/0022-3514.70.5.1067>
- Kwan, C. M., Love, G. D., Ryff, C. D., & Essex, M. J. (2003). The role of self-enhancing evaluations in a successful life transition. *Psychology and Aging, 18*(1), 3–12. <http://dx.doi.org/10.1037/0882-7974.18.1.3>
- Lupien, S. J., King, S., Meaney, M. J., & McEwen, B. S. (2001). Can poverty get under your skin? Basal cortisol levels and cognitive function in children from low and high socioeconomic status. *Development and Psychopathology, 13*(3), 653–676.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543–562. <http://dx.doi.org/10.1111/1467-8624.00164>
- Markus, H. R., Ryff, C. D., Curhan, K. B., & Palmersheim, K. A. (2004). In their own words: Well-being at midlife among high school-educated and college-educated adults. In O. G. Brim, C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we?: A national study of well-being at midlife* (pp. 273–319). Chicago: The University of Chicago Press.
- Marmot, M., Ryff, C. D., Bumpass, L. L., Shipley, M., & Marks, N. F. (1997). Social inequalities in health: Next questions and converging evidence. *Social Science & Medicine, 44*(6), 901–910. [http://dx.doi.org/10.1016/S0277-9536\(96\)00194-3](http://dx.doi.org/10.1016/S0277-9536(96)00194-3)
- Masten, A. S. (1999). Resilience comes of age: Reflections on the past and outlook for the next generation of research. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 281–296). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Mathabane, M. (1986). *Kaffir Boy*. New York: Plume, Penguin Books.
- Matthews, K. A., & Gallo, L. C. (2011). Psychological perspectives on pathways linking socioeconomic status and physical health. *Annual Review of Psychology, 62*, 501–530. <http://dx.doi.org/10.1146/annurev.psych.031809.130711>
- Morozink, J. A., Friedman, E. M., Coe, C. L., & Ryff, C. D. (2010). Socioeconomic and psychosocial predictors of interleukin-6 in the MIDUS national sample. *Health Psychology, 29*(6), 626–635. <http://dx.doi.org/10.1037/a0021360>
- Ostir, G. V., Raji, M. A., Ottenbacher, K. J., Markides, K. S., & Goodwin, J. S. (2003). Cognitive function and incidence of stroke in older Mexican Americans. *The Journals of Gerontology: Series A, Biological Sciences and Medical Sciences, 58*(6), 531–535. <http://dx.doi.org/10.1093/gerona/58.6.M531>
- Phelan, C. H., Love, G. D., Ryff, C. D., Brown, R. L., & Heidrich, S. M. (2010). Psychosocial predictors of changing sleep patterns in aging women: A multiple pathway approach. *Psychology and Aging, 25*(4), 858–866. <http://dx.doi.org/10.1037/a0019622>

- Pressman, S. D., & Cohen, S. (2005). Does positive affect influence health? *Psychological Bulletin*, 131(6), 925–971. <http://dx.doi.org/10.1037/0033-2909.131.6.925>
- Reich, J. W., Zautra, A. J., & Hall, J. S. (Eds.). (2010). *Handbook of adult resilience*. New York: The Guildford Press.
- Rosenkranz, M. A., Jackson, D. C., Dalton, K. M., Dolski, I., Ryff, C. D., Singer, B. H., et al. (2003). Affective style and in vivo immune response: Neurobehavioral mechanisms. *Proceedings of the National Academy of Sciences of the United States of America*, 100(19), 11148–11152.
- Ruini, C., Belaise, C., Brombin, C., Caffo, E., & Fava, G. A. (2006). Well-being therapy in school settings: A pilot study. *Psychotherapy and Psychosomatics*, 75(6), 331–336. <http://dx.doi.org/10.1159/000095438>
- 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. <http://dx.doi.org/10.1146/annurev.psych.52.1.141>
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081. <http://dx.doi.org/10.1037/0022-3514.57.6.1069>
- Ryff, C. D. (2008). Challenges and opportunities at the interface of aging, personality, and well-being. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd Ed., pp. 399–418). New York: Guilford Press.
- Ryff, C. D., Keyes, C. L., & Hughes, D. L. (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(3), 275–291.
- Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological Inquiry*, 9(1), 1–28. http://dx.doi.org/10.1207/s15327965phi0901_1
- Ryff, C. D., & Singer, B. (2003a). Flourishing under fire: Resilience as a prototype of challenged thriving. In C. L. M. Keyes & J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. 15–36). Washington, DC: American Psychological Association.
- Ryff, C. D., & Singer, B. (2003b). Ironies of the human condition: Well-being and health on the way to mortality. In L. G. Aspinwall & U. M. Staudinger (Eds.), *A psychology of human strengths: Perspectives on an emerging field* (pp. 271–288). Washington, DC: American Psychological Association.
- Ryff, C. D., Singer, B. H., & Love, G. D. (2004). Positive health: Connecting well-being with biology. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 359(1449), 1383–1394. <http://dx.doi.org/10.1098/rstb.2004.1521>
- Shmotkin, D. (2005). Happiness in the face of adversity: Reformulating the dynamic and modular bases of subjective well-being. *Review of General Psychology*, 9(4), 291–325.
- Singer, B. H., & Ryff, C. D. (1997). Racial and ethnic inequalities in health: Environmental, psychosocial, and physiological pathways. In B. Devlin, S. E. Feinberg, D. P. Resnick, & K. Roeder (Eds.), *Intelligence, genes, and success: Scientists respond to The Bell Curve* (pp. 89–122). New York: Springer-Verlag.

- Singer, B. H., Ryff, C. D., Carr, D., & Magee, W. J. (1998). Life histories and mental health: A person-centered strategy. In A. Raftery (Ed.), *Sociological methodology* (pp. 1–51). Washington, DC: American Sociological Association.
- Staudinger, U. M., Marsiske, M., & Baltes, P. B. (1995). Resilience and reserve capacity in later adulthood: Potentials and limits of development across the life-span. In D. Cicchetti & D. Cohen (Eds.), *Developmental psychopathology: Vol. 2. Risk, disorder, and adaptation* (pp. 801–847). New York: Wiley.
- Step toe, A., Gibson, E. L., Hamer, M., & Wardle, J. (2007). Neuroendocrine and cardiovascular correlates of positive affect measured by ecological momentary assessment and by questionnaire. *Psychoneuroendocrinology*, 32(1), 56–64. <http://dx.doi.org/10.1016/j.psyneuen.2006.10.001>
- Step toe, A., Owen, N., Kunz-Ebrecht, S., & Mohamed-Ali, V. (2002). Inflammatory cytokines, socioeconomic status, and acute stress responsivity. *Brain, Behavior, and Immunity*, 16(6), 774–784. [http://dx.doi.org/10.1016/S0889-1591\(02\)00030-2](http://dx.doi.org/10.1016/S0889-1591(02)00030-2)
- Step toe, A., & Wardle, J. (2005). Positive affect and biological function in everyday life. *Neurobiology of Aging*, 26(Suppl. 1), 108–112. <http://dx.doi.org/10.1016/j.neurobiolaging.2005.08.016>
- Tsenkova, V. K., Love, G. D., Singer, B. H., & Ryff, C. D. (2007). Socioeconomic status and psychological well-being predict cross-time change in glycosylated hemoglobin in older women without diabetes. *Psychosomatic Medicine*, 69(8), 777–784. <http://dx.doi.org/10.1097/PSY.0b013e318157466f>
- Tsenkova, V. K., Love, G. D., Singer, B. H., & Ryff, C. D. (2008). Coping and positive affect predict longitudinal change in glycosylated hemoglobin. *Health Psychology*, 27(Suppl. 2), S163–S171. [http://dx.doi.org/10.1037/0278-6133.27.2\(Suppl.\).S163](http://dx.doi.org/10.1037/0278-6133.27.2(Suppl.).S163)
- Urry, H. L., Nitschke, J. B., Dolski, I., Jackson, D. C., Dalton, K. M., Mueller, C. J., et al. (2004). Making a life worth living: Neural correlates of well-being. *Psychological Science*, 15(6), 367–372. <http://dx.doi.org/10.1111/j.0956-7976.2004.00686.x>
- van Reekum, C. M., Urry, H. L., Johnstone, T., Thurow, M. E., Frye, C. J., Jackson, C. A., et al. (2007). Individual differences in amygdala and ventromedial prefrontal cortex activity are associated with evaluation speed and psychological well-being. *Journal of Cognitive Neuroscience*, 19(2), 237–248. <http://dx.doi.org/10.1162/jocn.2007.19.2.237>
- World Health Organization. (1948). Constitution of the World Health Organization. In *Handbook of basic documents*. Geneva, Switzerland: Author. Retrieved July 1, 2011 from <http://www.who.int/governance/eb/constitution/en/index.html>
- Zautra, A. J., Hall, J. S., & Murray, K. E. (2010). Resilience: A new definition of health for people and communities. In J. W. Reich, A. J. Zautra, & J. S. Hall (Eds.), *Handbook of adult resilience* (pp. 3–29). New York: The Guilford Press.