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LONGITUDINAL CHANGE IN HAPPINESS DURING AGING: THE PREDICTIVE ROLE OF POSITIVE EXPECTANCIES

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ABSTRACT

This study employed hierarchical linear modeling to document the time course of happiness across 20 years from average ages of 66 to 86 among 717 members of the Terman Study of the Gifted. In addition, the study examined the role of positive expectancies about aging, assessed at an average age of 61, in enhancing happiness in aging. The results showed a small decline in happiness over time. Higher age was associated with less happiness at baseline and with a greater decline in happiness. At the same time, the general level of happiness in this sample was moderately high, with a large majority of respondents relatively happy into later aging. Moreover, positive expectancies about aging, assessed at an average age of 61, predicted greater happiness at ages 70, 75, and 80. These results held controlling for prior happiness, as well as for prior self-rated health and income.

Interest in positive psychology has grown rapidly in recent years, as social and behavioral scientists have turned their attention to understanding positive human experience as distinct from pathology (Seligman, 2003). Correspondingly, the

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study of happiness has evolved as a central area of inquiry (Diener & Diener, 1996). These developments are consistent with the contemporary emphasis on successful aging in the study of life-span development and in gerontology (Baltes & Baltes, 1990; Rowe & Kahn, 1998; Williamson, 2002). This work has included cognitive and behavioral strategies by which individuals can maximize their functioning and achieve a more satisfying life in aging (Baltes & Baltes, 1990; Brandstadter & Greve, 1994; Carstensen, Isaacowitz, & Turk-Charles, 1999). At a broad level, the present study combines interests in positive psychology and successful aging. The purpose of the present study is to investigate: (a) the time course of happiness during the aging years, and (b) the predictive role of positive expectancies about aging assessed at an average age of 61 in enhancing subsequent happiness from one to two decades later.

Aging and Happiness

Research on happiness and other indicators of positive well-being has shown that most people report positive subjective well-being (Diener & Diener, 1996). However, the life course patterning of positive affect and happiness is less clear, with diverse findings showing stability, positive change, and decline in happiness or positive affect in adulthood and aging. Lawton, Kleban, and Dean (1993) did not find an age difference in overall positive affect in cross-sectional analyses of young, middle-aged, and older individuals. Cross-sectional studies by Barrick, Hutchinson, and Deckers (1989) and Vaux and Meddin (1987) also showed no age differences in positive affect between young and old adults. In general, Costa, Zonderman, McCrae, and Cornoni-Huntley (1987) found stability in positive affect in a longitudinal analysis of men and women aged 25 to 74 over a 9-year period. In contrast, Mroczek and Kolarz (1998) found positive relations between positive affect and age in a cross-sectional study of participants in the Midlife in the United States Survey (MIDUS), with participants ranging in age from 25 to 74 years.

However, several other studies offer evidence of a small decline in positive affect over time, especially studies encompassing later aging. For example, large studies reporting age differences in cross-sectional international data have suggested a decline in positive affect across adulthood (Diener & Suh, 1998; Lucas, & Gohm, 2000). Similarly, in initial findings from the Berlin Aging Study, in which individuals were compared cross-sectionally from ages 70 to 100, positive affect declined with age (Smith & Baltes, 1993; Smith, Fleeson, Geiselmann, Settersten, & Kunzman, 1999). Moreover, in a longitudinal study, Stacy and Gatz (1991) found small decreases in positive affect in older individuals, but not in younger of middle-aged individuals over a fourteen-year period. Consistent with these findings, Charles, Reynolds, and Gatz (2001) found in a longitudinal study of 23 years duration that positive affect was stable for young and middle-aged individuals, but that older individuals showed a small decrease in positive affect over time.

The Role of Positive Expectancies

Research across several domains has demonstrated a link between positive expectancies and behavior, and reciprocal influences across the life cycle have been noted. In middle age, individuals acquire self-knowledge concerning their abilities and effectiveness from experience (Neugarten, 1968), and middle-aged and older individuals tend to be high on environmental mastery (Ryff, 1989). Individual mastery experiences, in combination with a responsive environment, influence expectancies about the future and create confidence in one's ability to perform a particular task (Bandura, 1977, 1997, 2006). Positive outcome expectations and self-efficacy are related to effort and persistence in performance (Maddox, 2002). Individuals who believe that their action will produce a desired outcome, and who have confidence in their ability to perform the action, will be more successful in achieving the desired effect (Bandura, 1977, 1997, 2006).

In addition, an optimistic in contrast to a pessimistic outlook predicts lower levels of depressive symptoms and negative affect and higher levels of positive affect and life satisfaction across the adult life span (Isaacowitz & Seligman, 2003). Optimism is also related to more positive health outcomes in the context of a number of physical health threats, including coronary heart disease and cancer (Scheier & Carver, 1993, 2003). Moreover, positive expectations for recovery are associated with more positive outcomes in hip surgery (Borkan & Quirk, 1992) and heart transplant surgery (Leedham, Meyerowitz, Muirhead, & Frist, 1995).

Expectancy constructs also relate to outcomes in aging. Positive self-perceptions of one's own aging are positively linked longitudinally with better functioning in aging and longevity examined across 18 to 23 years (Levy, Slade, & Kasl, 2002; Levy, Slade, Kunkel, & Kasl, 2002). Similarly, positive expectations regarding aging in older persons are related cross-sectionally to a greater tendency to seek healthcare for both physical and psychological symptoms (Sarkisian, Hays, & Mangione, 2002; Sarkisian, Lee-Henderson, & Mangione, 2003). Moreover, older adults who have positive expectations concerning aging are more likely to engage in physical activity (Sarkisian, Prochaska, Wong, Hirsch, & Mangione, 2005). These findings are consistent with the literature on self-rated health, which has demonstrated a positive relationship between positive views of one's health and engagement in health promoting behaviors (Mossey, 1995).

The Present Study

The present study had two purposes. First, the study documented the time course of happiness in aging across 20 years from average ages of 66 to 86 employing hierarchical linear modeling. In addition, the study examined the role of positive expectancies about aging assessed at an average age of 61, in enhancing happiness at ages 70, 75, and 80. Participants were 717 members of the Terman Study of the Gifted. The Terman sample provides a unique opportunity to examine longitudinal changes in happiness, as well as the role of expectancy in predicting

happiness in aging. A measure of expectations about ages 70 to 75 was included in the 1972 survey, when the participants were an average age of 61. In addition, happiness was assessed in six surveys from 1977 onward, when participants were average ages of 66 to 86.

More broadly, the Terman Study of the Gifted can contribute to understanding successful aging by providing an opportunity to study aging under relatively optimal circumstances. The participants in the Terman Study were advantaged intellectually, and compared to others of their cohort, they achieved higher levels of educational and occupational success (Holahan & Sears, 1995). They have reported moderately high levels of psychological well-being in aging (Holahan, 1998; Holahan, Holahan, & Wonacott, 2001).

Two hypotheses were advanced. Based on both cross-sectional (Diener & Suh, 1998; Lucas, & Gohm, 2000; Smith & Baltes, 1993) and longitudinal studies (Stacy & Gatz, 1991; Charles, Reynolds, & Gatz, 2001) encompassing later aging, we predict a small decline in happiness from average ages of 66 to 86. In addition, extrapolating from longitudinal research demonstrating the role of positive self-perceptions and positive expectations concerning aging in enhanced functioning in aging (Levy, Slade, & Kasl, 2002; Levy, Slade, Kunkel, & Kasl, 2002; Sarkisian, 2002; Sarkisian et al., 2005), we predicted that positive expectancies about aging assessed at age 60 would predict greater happiness from one to two decades later.

METHOD

Participants

The participants for the study were 717 members of the Terman Study of the Gifted who were less than or equal to 65 years of age in 1972 (M = 60.43, SD = 3.05, range = 48 to 65) and who responded to one or more measures of happiness in questionnaires administered in 1977, 1982, 1986, 1991, 1996, and 1999 (average ages of 66 to 86). The 65 years of age cutoff ensured that no member of the sample reached the age of 70 before the 1977 follow-up. The present sample in 1972 included 349 men and 368 women. The sample was well-educated, with 180 (25.1%) having less than a bachelors degree, 189 (26.4%) having a bachelors degree, 77 (10.7%) having some graduate work, and 271 (37.8%) having a graduate degree. Median family income in 1972 was $25,000 ($116,000 in 2007 dollars). Average rating of health in 1972 was 3.32 (SD = .82) on a five-point scale ranging from 0 = very poor to 4 = very poor.

Extensive analysis of attrition in the sample (Holahan & Sears, 1995) found that the sample has become somewhat more selective over time. For example, although participants who remained in the study until 1982 or later did not differ from those who left the study in IQ or socioeconomic status of the family of origin, those who remained had better health and somewhat more education, and the men had higher occupational success, self-confidence, and self-esteem.

Measures

Expectancy

Participants responded to an item on the 1972 at an average age of 61 (1972 age for this subsample is 60.58), which asked, "As you look ahead to the years when your age is 70-75, how do you feel about them?" Responses were: "expect life to be rather unsatisfying" or "expect to dislike being retired" (score = 0); "expect to be contented enough" (score = 1); and "expect to enjoy those years thoroughly" (score = 2).

Happiness

Participants were asked to rate their happiness in the six surveys from 1977 to 1999, from average ages of 66 to 86. Responses were: "not too happy" (score = 0), "pretty happy" (score = 1), and "very happy" (score = 2). This measure is identical to that developed by Bradburn and used in the National Opinion Research Center (NORC) survey (Bradburn, 1969). Single-item measures are common in happiness research (Lyubomirsky, King, & Diener, 2005) and have been shown to be reliable and valid (Abdel-Khalek, 2006).

Self-rated Health

In 1972, at an average age of 61, participants were asked to rate their general health during the previous two years. Responses were: "very poor" (score = 0), "poor" (score = 1), "fair" (score = 2), "good" (score = 3), and "very good" (score = 4). Self-rated health is positively related to objective health as measured by physicians, and it predicts mortality beyond predictions based on objective health indicators (Idler & Kasl, 1991; LaRue, Bank, Jarvik, & Hetland, 1979).

Total Family Income

In 1972, at an average age of 61, participants reported their annual income from diverse sources during the previous year. Responses were totaled to index total family income, and the sum was coded in thousands of dollars, with the highest category representing incomes over $90,500.

RESULTS

Overview of Data Analyses

Data analyses were conducted using hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002; Raudenbush, Bryk, Cheong, & Congdon, 2001). HLM investigates the hierarchical structure of nested data, such as where change processes are nested within respondents who differ on individual characteristics. Coefficients (*B*, unstandardized) are derived for each respondent indicating that

individual's happiness at a designated time point (intercept) and how much that individual's happiness changes each year (slope). HLM has the advantage of retaining participants who do not provide data at all time points. The *N* in each set of analyses is the number of participants who responded to the happiness measure at at least one time point and who, in the predictive analyses, also provided data on positive expectancy, 1977 happiness, health, and income. The *N* is specified for each set of analyses.

Aging and Happiness

Within individuals (level 1), we examined the relationship between time course and happiness across the study period. This set of analyses included 717 participants. The individual time slopes are regarded as a sample drawn from a population of slopes, and the mean of this population of slopes is tested against a value of zero using a *t*-ratio. There was a small but statistically significant decrease in happiness (B –.02, t (716) = –10.93, $p < .01$) from average ages of 66 to 86. The mean for happiness varied from 1.42 (SD = 0.61) at age 66 to 1.19 (SD = 0.58) at age 86 (see Table 1). Overall, however, the level of happiness in this sample was positive, with a large majority of respondents reporting that they were "pretty happy" or "very happy" at every time of measurement.

To explore the potential moderating roles of age and gender on the level and time course of happiness, we introduced age and gender as level 2 predictors of the baseline intercepts and individual time slopes, which now function as outcome variables. A coefficient (G, unstandardized) is derived indicating how strongly age and gender are associated with happiness at baseline and with the happiness time slope and whether these coefficients differ from 0 is tested by a *t*-ratio. Gender was unrelated to either baseline happiness (G = –.16, t(714) = –0.61, p = .54) or the happiness time slope (G = .002, t(714) = 0.65, p = .52). However, higher age was significantly associated with less happiness at baseline (G = .10, t(714) = 2.52, $p < .05$) and with a greater decline in happiness (G = –.002, t(714) = –2.90, $p < .01$). Thus, overall, respondents showed a small decline in happiness across the study period, with older individuals both less happy at baseline and showing a greater decrease in happiness over time.

The Role of Positive Expectancies

Next, between individuals (level 2), we examined the association between individual differences in positive expectancies about aging at an average age of 61 (assessed in 1972) and subsequent happiness. This set of analyses included 421 participants. Because the expectancy item focused on the years 70 to 75, we estimated happiness at these ages, as well as five years later at age 80. A coefficient (G, unstandardized) is derived indicating how strongly positive expectancies about aging assessed at average age of 61 are associated with the happiness intercepts and whether these coefficients differ from 0 is tested by a *t*-ratio.

Table 1. Descriptive Statistics for Happiness from 1977 to 1999

Variable	Year											
	1977 (*N* = 627)		1982 (*N* = 613)		1986 (*N* = 547)		1992 (*N* = 380)		1996 (*N* = 218)		1999 (*N* = 130)	
	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*	Mean	*SD*
Happiness[a]	1.42	.61	1.36	.63	1.21	.61	1.16	.60	1.20	.62	1.19	.58

[a]The happiness means represent means for participants who were less than or equal to 65 years of age in 1972.

Although happiness was not assessed in 1972, we were able to approximate a prospective design by controlling for happiness at age 66 (assessed in 1977) at level 2 in predicting subsequent happiness at ages 70, 75, and 80. 1977 happiness was chosen as a control variable because happiness was not included on the 1972 questionnaire. In addition, these analyses controlled for age and gender at level 2.

Specifically, we first introduced positive expectancies about aging assessed in 1972 at an average age of 61 ($M = 1.60$, $SD = 0.60$) as a level 2 predictor of the individual happiness intercepts from level 1 (estimated at average ages of 70, 75, and 80), controlling for happiness at age 66, age, and gender. Positive expectancies about aging assessed at age 61 significantly predicted more happiness at the age of 70 ($G = .09$, $t(416) = 2.29$, $p < .05$), age 75 ($G = .09$, $t(416) = 2.59$, $p < .05$), and age 80 ($G = .09$, $t(416) = 2.10$, $p < .05$), controlling for happiness at age 66, age, and gender. As an illustration Figure 1 shows estimated happiness from ages 70 to 80, controlling for happiness at age 66, assessed in 1977, as a function of contrasting levels (scores of 0 vs. 2) of positive expectancies about aging assessed in 1972 at an average age of 61. Individuals with positive expectancy scores of 1 fit an intermediate pattern. Positive expectancies about aging at baseline did not relate significantly to the happiness time slope ($G = –.00$, $t(416) = –0.10$, $p = .92$).

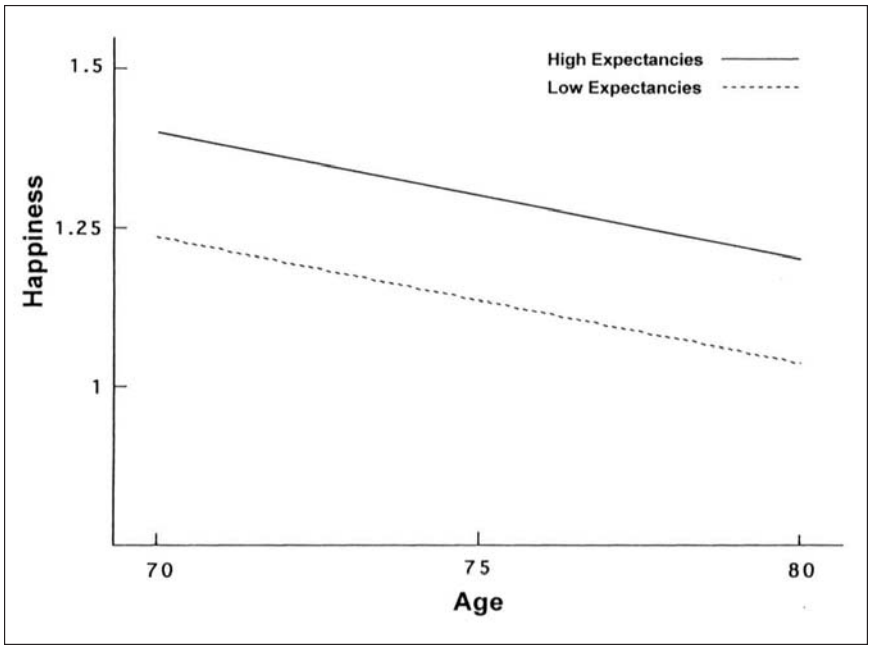

Figure 1. Happiness from ages 70 to 80 as a function of high versus low positive expectancies about aging assessed at age 61.

Second, we conducted additional analyses to exclude the possibility that positive expectancies about aging might simply reflect economic advantage and better health. Specifically, we repeated the analyses with positive expectancies about aging assessed in 1972 at an average age of 61 as a predictor of happiness, controlling for physical health (M = 3.42, SD = .77) and total family income in this subsample (Mdn = $25,000 or $125,000 in 2007 dollars) assessed in 1972. As above, these analyses also controlled for happiness at age 66, age, and gender. Positive expectancies about aging assessed at an average age of 61 continued to significantly predict greater happiness at age 70 (G = .09, $t(414) = 2.37$, $p < .05$), age 75 (G = .09, $t(414) = 2.79$, $p < .01$), and age 80 (G = .08, $t(414) = 2.12$, p .05), controlling for family income and physical health, as well as for happiness at age 66, age, and gender. Thus, overall, respondents who held more positive expectancies about aging when they were age 61 were significantly more happy almost ten years later, and this adaptive advantage remained significant through ages 75 and 80. Moreover, these effects held controlling for age and gender, prior happiness, and family income and physical health.

DISCUSSION

This study employed hierarchical linear modeling to document the time course of happiness across 20 years from average ages of 66 to 86 among 717 members of the Terman Study of the Gifted. In addition, the study examined the role of positive expectancies about aging when respondents were an average age of 61 in enhancing happiness in aging. At a broad level, the present study combines emerging interests in positive psychology (Diener & Diener, 1996; Seligman, 2003) and successful aging (Baltes & Baltes, 1990; Rowe & Kahn, 1998; Williamson, 2002).

Although research has shown evidence for stability, increase, and decline in happiness over the life cycle, studies that encompass later aging have tended to show decline. Consistent with both cross-sectional (Diener & Suh, 1998; Lucas & Gohm, 2000; Smith & Baltes, 1993) and longitudinal studies (Stacy & Gatz, 1991; Charles et al., 2001) encompassing later aging, we found a small but statistically significant decline in happiness from average ages of 66 to 86. In addition, consistent with this earlier work on positive affect in aging, higher age was associated with less happiness at baseline and with a greater decline in happiness across the 20 years. These results are noteworthy because the Terman participants are relatively advantaged compared to other older persons (Holahan & Sears, 1995). At the same time, the results of this study showed that the general level of happiness in this sample was moderately high, with a large majority of respondents reporting that they were pretty happy or very happy at every time of measurement. The level of happiness in this older sample compares favorably with the level of happiness in the general population of adults (Diener & Diener, 1996).

In addition, consistent with longitudinal research demonstrating the role of positive self-perceptions and positive expectations concerning aging in enhanced functioning in aging (Levy, Slade, & Kasl, 2002; Levy, Slade, Kunkel, & Kasl, 2002; Sarkisian et al., 2002; Sarkisian et al., 2005), we found that positive expectancies about aging assessed at an average age of 61 predicted greater happiness from one to two decades later. Individuals whose expectancies about the years 70 to 75 were more positive when they were age 60, reported more happiness at these ages, as well as five years later at age 80, compared to those with more negative expectancies. Although happiness declined at all levels of expectancy, individuals who had positive expectancies about aging at age 60 maintained an advantage in happiness up to 20 years later. These results held controlling for prior happiness, as well as for prior self-rated health and income. More generally, these results are congruent with research on the powerful behavioral effects of positive expectancies in constructs such as self-efficacy (Bandura, 1977, 1997, 2006) and optimism (Isaacowitz & Seligman, 2003; Scheier & Carver, 2993, 2003).

Some limitations should be noted in interpreting these results. Self-report measures are subject to social desirability and common method variance. In addition, use of a single item to measure happiness may not reflect this construct as fully as a multi-item index. However, single-item measures have been used commonly in happiness research (for a review, see Lyubomirsky et al., 2005), and recent evidence indicates that such measures show good reliability and good concurrent, convergent, and divergent validity in community surveys (Abdel-Khalek, 2006). Also, these limitations tend to reduce statistical power and would be of greater concern in the context of a failure to replicate earlier findings.

In addition, because of the advantaged nature of the Terman sample, future studies with broader samples will be necessary to confirm the findings of the present study. The advantaged nature of the sample is further increased by selective attrition, both up to the baseline assessment and throughout the study period examined here. At the same time, however, the study of the surviving Terman sample makes a valuable contribution to understanding optimal aging by describing the pattern of positive emotions in aging under relatively favorable conditions. The members of the Terman sample are advantaged with respect to intelligence, educational and career attainment, and financial resources, and they have reported favorable levels of health and well-being throughout aging (Holahan & Sears, 1995).

The present study contributes to a fuller understanding of positive emotions during the aging years. These results suggest that, even in optimal conditions, small declines in happiness are likely during aging. At the same time, however, our findings are encouraging about the prospects for successful aging. The general level of happiness in this sample of older individuals was moderately high, with a large majority of respondents remaining relatively happy into later aging. Moreover, positive cognitions about aging in late middle age provided an adaptive advantage in aging. This advantage persisted from one to two decades later, even

after controlling for possible confounding variables. These results suggest that educating individuals about the possibility of successful aging may itself promote well-being far into the aging years.

REFERENCES

Abdel-Khalek, A. (2006). Measuring happiness with a single-item scale. *Social Behavior and Personality, 34,* 139-150.

Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1-34). (Cambridge, England: Cambridge University Press.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84,* 191-215.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science, 1,* 164-180.

Barrick, A. L., Hutchinson, R. L., & Deckers, L. H. (1989). Age effects on positive and negative affect: Support for a two-factor theory. *Psychology and Aging, 7,* 158-163.

Borkan, J. M., & Quirk, M. (1992). Expectations and outcomes after hip fracture in the elderly. *International Journal of Aging and Human Development, 34,* 339-350.

Bradburn, N. (1969). *The structure of psychological well-being*. Chicago, IL: Aldine.

Brandtstadter, J., & Greve, W. (1994). The aging self: Stabilizing and protective processes. *Developmental Review, 14,* 52-80.

Carstensen, L. L., Isaacowitz, D. M., & Turk-Charles, S. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54,* 165-181.

Charles, S. T., Reynolds, C. A., & Gatz, M. (2001). *Journal of Personality and Social Psychology, 80,* 136-151.

Costa, P. T., Zonderman, A. B., McCrae, R. R., & Cormoni-Huntley, J. (1987). Longitudinal analyses of psychological well-being in a national sample: Stability of means levels. *Journal of Gerontology, 42,* 50-55.

Diener, E., & Diener, C. (1996). Most people are happy. *Psychological Science, 7,* 181-185.

Diener, E., & Suh, M. E. (1998). Subjective well-being and age: An international analysis. In K. W. Schaie & M. P. Lawton (Eds.), *Annual Review of Gerontology and Geriatrics: Focus on Emotion and Adult Development, 17,* 304-324.

Holahan, C. K. (1998). Change in Psychosocial functioning and health from age 70 to age 80: Findings from the Terman Sample. *Journal of Mental Health and Aging, 4,* 335-345.

Holahan, C. K., Holahan, C. J., & Wonacott, N. L. (2001). Psychological well-being at age 80: Health-related and psychosocial factors. *Journal of Mental Health and Aging, 7,* 1-17.

Holahan, C. K., & Sears, R. R. (1995). *The gifted group in later maturity*. Stanford, CA: Stanford University Press.

Idler, E. L., & Kasl, S. (1991). Health perceptions and survival: Do global evaluations of health status really predict mortality? *Journal of Gerontology, 56,* 55-65.

Isaacowitz, D. M., & Seligman, M. E. P. (2003). Cognitive styles and well-being in adulthood and old age. In M. H. Bornstein, L. Davidson, C. L. M. Keyes, and K A. Moore

(Eds.), *Well-being: Positive development across the life course* (pp. 449-475). Mahwah, NJ: Lawrence Erlbaum.

LaRue, A., Bank, L., Jarvik, L., & Hetland, M. (1979). Health in old age: How do physicians' ratings and self-ratings compare? *Journal of Gerontology, 34,* 687-691.

Lawton, M. P., Kleban, M. H., & Dean, J. (1993). Affect and age: Cross-sectional comparisons of structure and prevalence. *Psychology and Aging, 8,* 165-175.

Leedham, B., Meyerowitz, B. E., Muirhead, J., & Frist, W. H. (1995). Positive expectations predict health after heart transplantation. *Health Psychology, 14,* 74-79.

Levy, B. R., Slade, M. D., & Kasl, S. (20020. Longitudinal benefits of positive self-perceptions of aging on functional health. *Journal of Gerontology: Psychological Sciences, 57B*, P409-P417.

Lucas, R. W., & Gohm, C. L. (2000). Age an sex differences in subjective well-being across cultures. In E. Diener and E. M. Suh (Eds.), *Culture and subjective well-being* (pp. 291-317). Cambridge, MA: MIT Press.

Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131,* 803-855.

Maddox, J. E. (2002). Self-efficacy: The power of believing you can. In C. R. Snyder and S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 277-287). New York: Oxford University Press.

Mossey, J. M. (1995). Importance of self-perceptions for health status among older persons. In M. Gatz (Ed.), *Emerging issues in mental health and aging* (pp. 124-162). Washington, DC: American Psychological Association.

Mroczek, D. K., & Kolarz, C. M. (1998). The effect of age on positive and negative affect: A developmental perspective on happiness. *Journal of Personality and Social Psychology, 75,* 1333-1349.

Neugarten, B. L. (1968). Adult personality: Toward a psychology of the life cycle. In B. L. Neugarten (Ed.), *Middle age and aging: A reader in social psychology* (pp. 137-147). Chicago, IL: The University of Chicago Press.

Raudenbush, S. W., & Bryk, A. S. (2002). *HLM 5: Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage Publications.

Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., & Congdon, R. T., Jr. (2001). *HLM 5: Hierarchical linear and nonlinear modeling.*. Lincolnwood, IL: Scientific Software International.

Rowe, J. W., & Kahn, R. L. (1998). *Successful aging*. New York: Pantheon.

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,* 1069-1081.

Sarkisian, C. A., Hays, R. B., & Mangione, C. M. (2002). Do older adults expect to age successfully? The association between expectations regarding aging and beliefs regarding healthcare seeking among older adults. *Journal of the American Geriatrics Society, 50,* 1837-1843.

Sarkisian, C. A., Lee-Henderson, M. H., & Mangione, C. M. (2003). Do depressed older adults who attribute depression to "old age" believe it is important to seek care? *Journal of General Internal Medicine, 18,* 1001-1005.

Sarkisian, C. A., Proshaska, T. R., Wong, M. D., Hirsch, S., & Mangione, C. M. (2005). The relationship between expectations for aging and physical activity among older adults. *Journal of Internal Medicine, 20,* 911-915.

Scheier, M. F., & Carver, C. S. (1993). On the power of positive thinking: The benefits of being optimistic. *Current Directions in Psychological Science, 2,* 26-30.

Scheier, M. F., & Carver, C. S. (2003). Self-regulatory processes and responses to health threats: Effects of optimism on well-being. In J. Suls and K. A. Wallston (Eds.), *Social psychological foundations of health and illness* (pp. 395-428). Malden, MA: Blackwell Publishing.

Seligman, M. E. P. (2003). Foreword: The past and future of positive psychology. In C. L. M. Keyes and J. Haidt (Eds.), *Flourishing: Positive psychology and the life well-lived* (pp. xi-xx). Washington, DC: American Psychological Association.

Smith, J., & Baltes, P. B. (1993). Differential psychological aging: Profiles of the old and very old. *Ageing and Society, 13,* 551-587.

Smith, J., Fleeson, W., Geiselmann, B. Settersten, R. A, & Kunzman, U. (1999). Sources of well-being in very old age. In P. B. Baltes and K. U. Mayer (Eds.), *The Berlin aging study: Aging from 70 to 100* (pp. 450-471). Cambridge, England: Cambridge University Press.

Stacey, C. A., & Gatz, M. (1991). Cross-sectional age differences and longitudinal change on the Bradburn Affect Balance Scale. *Journal of Gerontology, Psychological Sciences, 46,* P76-P78.

Vaux, A., & Meddin, J. (1987). Positive and negative life change and positive and negative affect among the rural elderly. *Journal of Community Psychology, 15,* 447-458.

Williamson, G. M. (2002). Aging well: Outlook for the 21st century. In C. R. Snyder and S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 676-686). New York: Oxford University Press.

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