Socioeconomic status, health, and psychological well-being: Findings from the Wisconsin Longitudinal Study

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Drawing on a variety of theories defining successful aging, Carol Ryff suggested a multidimensional model of PWB that "emphasizes wellness rather than illness, and … incorporates developmental, growth-oriented perspectives" (Ryff 1989a: 49). Ryff's model comprises six psychological dimensions: (1) *autonomy*: a sense of self-determination and the ability to resist social pressures, (e.g., "I have confidence in my opinions even if they are contrary to the general consensus"); (2) *environmental mastery*: one's ability to modify their environment in order to meet personal needs and preferences, (e.g., "I'm good at managing the many responsibilities of my daily life"); (3) *personal growth*: developing one's potential by growing and expanding as a person, (e.g., "I have the sense that I have developed a lot as a person over time"); (4) *positive relations with others*: warm and trusting interpersonal ties, (e.g., "People would describe me as a giving person, willing to share my time with others"); (5) *purpose in life*: finding meaning in one's efforts and challenges, (e.g., "I'm an active person in carrying out the plans I set for myself"); (6) *self-acceptance*: holding positive attitudes about oneself despite the awareness of one's limitations, (e.g., "In general, I feel confident and positive about myself").

Although the six dimensions of RPWB have been theoretically proposed to measure distinct aspects of well-being, Springer and Hauser (2005) find very little support for the conceptually postulated multidimensionality of RPWB. They observed that across three large data sets, the highest latent variable correlations were consistently those among purpose in life, self-acceptance, environmental mastery, and personal growth. When estimated with a confirmatory latent factor model assuming ordered categorical measurement, these correlations exceeded 0.95. Based on these findings, and despite theoretical claims to the contrary, Springer and Hauser concluded that Ryff's scales of PWB do not measure as many as six distinct dimensions.

Pudrovska, Hauser, and Springer (2005) complemented the work of Springer and Hauser by examining the extent to which the six dimensions of RPWB exhibit similar variation by age. We initially expected that the four dimensions identified by Springer and Hauser as virtually indistinguishable would show identical age patterns.

Using three large surveys, that study explored cross-sectional and longitudinal age differences in the six dimensions of Ryff's scales of PWB. To our knowledge, this was the first study to use longitudinal data to examine changes in PWB among real cohorts over approximately a 10-year period. In addition to longitudinal analysis, we also looked at cross-sectional age patterns to assess the extent to which our cross-sectional findings are consistent with previous studies on age variation conducted mainly by Carol Ryff and associates and based overwhelmingly on cross-sectional data.

Overall, the findings from existing cross-sectional studies on age variation in RPWB indicate that there is a tendency for autonomy and environmental mastery to increase with age, and for personal growth and purpose in life to decline with age, while positive relations with

others and self-acceptance do not show any specific pattern. These studies suggest that the six dimensions of RPWB do vary across age groups. Yet, it is impossible to ascertain whether observed age differences reflect maturation and accommodative developmental processes or, alternatively, represent nonchanging differences among age cohorts. Because our analysis was based on both cross-sectional and longitudinal data, were able to distinguish differences among cohorts in PWB from intraindividual developmental changes.

This study was based on three large data sets: the Wisconsin Longitudinal Study (WLS), Midlife Development in the United States (MIDUS), and the National Survey of Families and Households (NSFH):

WLS is a long-term study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957. The study participants were interviewed at ages 17-18 (1957), 36 (in 1975), 53-54 (in 1992-93), and 64-65 (in 2003-04). In 1977, the study design was expanded with the collection of parallel interview data for a random sample of 2,000 siblings of primary respondents. In 1992-1994, four surveys were conducted: telephone and mail surveys of the WLS graduates and similar surveys of their siblings. For the cross-sectional analysis, we use the 1994 sibling data, while our longitudinal analysis is based on the 1992-1993 and 2003-2005 data for the WLS graduates.

MIDUS is a multistage probability sample of 3,032 non-institutionalized English-speaking adults between the ages of 25 and 74 years old. Data were collected during 1995 and 1996.

NSFH began in 1987-1988 with a national sample of more than 10,000 households. The five-year follow-up was conducted in 1992 to 1994. The third wave of the NSFH was conducted in 2001-2003. PWB was included in the self-administered health modules in both wave 2 and

wave 3. We restricted our analysis to main respondents who participated in NSFH II and NSFH III and answered the PWB items in both waves.

VARIABLES

Psychological well-being. NSFH and MIDUS contain the same 18 items with slight wording differences. The WLS mail instrument includes 6 of the 18 NSFH/MIDUS items in addition to 36 other items. The mail survey in 1992-1993 contained seven items for each subscale, yielding a total of 42 items. The mail survey in 2003-2005 included 32 PWB items. The two mail surveys have only 19 items in common that were included in both waves. Our intracohort analysis of the WLS sample is based on these 19 repeated items.

Response categories for the RPWB items are not identical across the three surveys. In the WLS and NSFH II surveys, Likert scales range from 1 (agree strongly) to 6 (disagree strongly), while in the NSFH III survey from 1 to 5. In the MIDUS sample, response choices ranged from 1 to 7 with the mid-point "don't know" that for the current project was recoded as missing data and the response categories were rescaled from 1 to 6.

To create a scale for each of the six dimensions, items were averaged and, if necessary, reverse coded so that higher scores correspond to higher levels of reported PWB.

Age. In the cross-sectional analysis, WLS siblings were categorized into three groups according to their age: 29-49 years (n=1,040); 50-59 years (n=1,969); 60-80 years (n=795). NSFH III respondents were subdivided into the following 3 groups: 31-50 years (n=2,391); 51-65 years (n=3,040); 66-100 years (n=1,830). Among the MIDUS respondents, five age groups were compared to each other: 25-34 (n=988); 35-44 (n=1,010); 45-54 (n=981); 55-64 (n=796); 65-74 (n=467).

In the NSFH longitudinal comparisons, we trace five cohorts of respondents over approximately a 10-year period. The youngest cohort was 29-38 years old in 1992-1994 and 39-48 in 2001-2002 (n=771). The next cohort was aged 39-48 in 1992-1994 and 49-58 in 2001-2002 (n=1,611). Members of the third cohort were 49-58 years old in the NSFH II wave and 59-68 in the NSFH III wave (n=902). The fourth cohort was aged 59-68 in 1992-1994 and 69-78 in 2001-2002 (n=593). Finally, the fifth cohort was 69 years or older during the second wave and 79 years or older during the third wave (n=390).

The longitudinal analysis of the WLS graduates compares their PWB scores measured first in 1992-1993 when they were 53-54 years old and then in 2003-2004 they were 64 or 65 years old (n=5,085).

The analysis of the WLS sample focuses on the decade between 53-54 years and 64-65 years, which is a transitional period from middle adulthood to late life and, thus, an important developmental stage. One of the NSFH cohorts, specifically, individuals who were ages 49-58 in 1992 and 59-68 in 2002, was centered on the age of the WLS graduates.

RESULTS

Cross-Sectional Findings

Cross-sectional comparisons show that in the WLS, MIDUS, and NSFH *personal growth* and *purpose in life* are lower among older age groups relative to younger ages. The findings from the MIDUS and WLS sibling data reveal that *environmental mastery* and *positive relations* tend to be higher in older age groups relative to the younger ones. In the NSFH sample, both dimensions are higher in the 51-65 age group than either among adults aged 31-50 years or among those who are 65 years or older.

Among the WLS siblings as well as MIDUS respondents, the level of *autonomy* is slightly higher in each successive age group. In contrast, in the NSFH, autonomy is highest in the 31-50 age group relative to the two older age groups. Yet, despite statistical significance, these differences in autonomy are of a very small magnitude magnitude.

Among the WLS siblings, self-acceptance tends to increase with age, and the highest levels of self-acceptance are observed in the oldest age group (60-80 years old). In the NSFH and MIDUS samples, this dimension of RPWB does not appear to vary by age age.

In sum, consistent with previous studies, our cross-sectional findings showed that personal growth and purpose in life are lower in older age groups compared to younger ages. Environmental mastery tends to be higher among older adults relative to their younger peers, while self-acceptance shows little age variation. Both patterns are also in agreement with extant cross-sectional research. In terms of autonomy, our analysis yielded different patterns of age variation in this dimension of RPWB in different data sets. Finally, we document that older people are somewhat more likely to report positive relations with others than their younger peers, which is consistent with some previous cross-sectional studies.

It should be noted, however, that previous cross-sectional studies and our additions to those studies cover somewhat different birth cohorts. To the extent that birth cohort differences drive cross-sectional age variation, age patterns should ideally be compared across the same cohorts.

Longitudinal Findings

Longitudinal comparisons of means reveal a consistent decrease in *personal growth* and *purpose in life* with advancing age. Using the 19 items that were repeated in the two waves, we found that the WLS graduates reported significantly lower levels of purpose in life and personal

growth at ages 64-65 than at ages 53-54. A similar pattern was observed in the NSFH data: for each cohort, the levels of personal growth and purpose in life declined significantly between the two waves of data collection, although this decline was particularly pronounced for older cohorts.

Longitudinal comparisons using the NSFH data indicate that both *environmental mastery* and *positive relations with others* slightly increase among cohorts who were 48 or younger in the second wave but decline for the cohorts of individuals who were 59 or older. The WLS longitudinal analysis reveals that respondents reported higher levels of environmental mastery but lower levels of positive relations with others at ages 64-65 than at ages 53-54, suggesting that environmental mastery has increased, while positive relations decreased for the WLS graduates over the 10-year period

In the longitudinal comparisons, WLS graduates exhibit higher levels of *autonomy* in 1992-1993 at ages 53-54 than in 2003-2004 when they were 64 or 65 years old; thus, the WLS data suggest a decline in autonomy in late midlife. A similar pattern is observed in the NSFH sample. Thus, both NSFH and WLS longitudinal findings indicate that autonomy tends to decrease in mid- and later life.

Longitudinal analysis reveals that *self-acceptance* does not vary among younger NSFH cohorts (i.e. for individuals who were 58 years or younger in 1992-1994) but declines for older cohorts—those who were 59 years or older in the NSFH II sample and 69 years or older in the NSFH III sample. The WLS longitudinal comparison shows that self-acceptance decreases in the decade between respondents' mid-50s and mid-60s, while for the NSFH cohort of similar age self-acceptance remains unchanged.

To sum up, longitudinal analysis among both the NSFH and WLS respondents indicates that personal growth and purpose in life decline with age. In terms of environmental mastery and positive relations with others, patterns are mixed. In the NSFH sample, environmental mastery and positive relations with others start to decline in late midlife and continue to decrease after that. However, the WLS findings suggest that environmental mastery increases in the period between late midlife and early old age, while positive relations with others decrease. Autonomy decreases with age in both samples. Self-acceptance declines for the WLS cohort (from mid-50s to mid-60s); yet, it remains basically unchanged for the NSFH cohort of similar age and starts to decline only among the two oldest NSFH cohorts. However, all of the observed changes, whether consistent or inconsistent across ages and studies, were rather small in comparison to the observed variability across individuals at any point in time. That is, we find little basis for suggestions that there is a normative life-course pattern of change in the dimensions of psychological well-being.

In a third paper, Hauser, Pudrovska, and Springer (forthcoming) are examining temporal persistence in the dimensions of psychological well-being. While the findings are not yet fully confirmed, our initial findings are based on repeated measurements of PWB among high school graduates in the Wisconsin Longitudinal Study in 2003-2005. Here, we have reconfirmed the same pattern of exceptionally high correlations between the dimensions of well-being in the 2003-05 cross-section (when participants were mainly 64 and 65 years old) as in the 1993 cross-section (when they were 53 and 54 years old). In addition, we find exceptionally high intertemporal persistence of each dimension of psychological well-being – correlations of approximately 0.85 – which are similar to those expected in basic dimensions of personality (the "Big Five."

We hypothesized that the dimensions of psychological well-being might change very similarly by age, but found that only personal growth and purpose in life exhibit almost equivalent cross-sectional and longitudinal age variation. This similarity suggests that personal growth and purpose in life indeed measure a single underlying concept.

Thus, our expectations regarding the similarity of age variation were confirmed only for the two dimensions. Yet, it should be noted that age-related changes revealed by our analysis are of a small magnitude (despite statistical significance). Because the scope of age variation in the RPWB scales is so narrow, it is possible that age patterns we observe are not substantively meaningful and, therefore, do not speak directly to the distinct nature of the RPWB dimensions. We had chosen to look first at variation in PWB by age because that has been a major focus of previous research using the subscales. However, age has not proved to be very informative with respect to the dimensionality of psychological well-being. For that reason, our next step will be to examine whether the six dimensions of psychological well-being correlate differentially with relevant demographic, social, economic, and psychological variables. That is, can the relationships between these variables and well-being be described as if there were a single latent dimension of psychological well-being? Or are the several dimensions of well-being related differentially to other variables? The statistical analysis will be based on a MIMIC (multiple-indicator, multiple-cause) model (Hauser and Goldberger 1973).

We have in hand a wealth of data to use in these analyses, namely, longitudinal data including measures of PWB in 1993 and 2003-05 from the WLS; longitudinal data including measures of PWB in 1992 and 2001-2003 from the NSFH; and cross-sectional data from MIDUS in 1995-96. We are confident both of our ability to carry out these analyses with multiple

samples, and also of the desirability of basing our conclusions on consistent findings across the samples.