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## Age and Race Differences in the Trajectories of Self-Esteem

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### Abstract

The purpose of this research was to assess age- and race-based variation in within-persons changes in self-esteem over a 16-year period. We used hierarchical linear modeling with data from 3,617 adults aged 25 and older who were interviewed up to four times. Self-esteem increased, on average, over the course of the study period. At the same time, significant age variations around this trend were observed, with younger adults experiencing increases in self-esteem and older adults experiencing decreases. In general, race differences were not evident with respect to average levels or rates of change in self-esteem. However, a significant age by race interaction suggested that late life declines in self-esteem were steeper for blacks compared to whites. These findings suggest the presence of age- and race-based stratification with respect to self-esteem. Future work in this area should examine the health and well-being effects of declining self-esteem during old age.

### Keywords

Self-esteem trajectories; age differences; race differences

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Possessing a positive sense of self-worth, or self-esteem, is regarded by many as critical for maintaining a high quality of life (George, 2000). Conversely, linkages have long been found between negative attitudes about oneself and a variety of risk behaviors and mental health outcomes (Kaplan, 1975). Despite recent criticism of the causal utility of global self-esteem, especially in relation to behavioral outcomes (Baumeister, Campbell, Krueger, & Vohs, 2003), its role as a determinant of subjective well-being is well-established (George, 2000). Therefore, global self-esteem continues to be an important focal point in the study of adult development and aging (Collins & Smyer, 2005; McMullin & Cairney, 2004; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Schieman & Campbell, 2001).

Recognition of the potential impact of self-esteem on well-being raises important questions about how levels of self-esteem vary throughout the population. A fundamental theoretical perspective in this regard has been that self-esteem is shaped within the context of the social environment, and as such, levels of self-esteem are likely to be patterned by one's position in

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the social structure (Marmot, Ryff, Bumpass, Shipley, & Marks, 1997). That is, access to resources and opportunities for achievement afforded by one's social position should be directly correlated with levels of self-esteem.

Empirical evidence of the social stratification of self-esteem, however, has revealed at least two major inconsistencies with this general perspective. First, while normative losses in functional capacity and social roles associated with aging might be expected to lead to declines in self-esteem during later life, researchers have failed to reach a consensus on the nature of changes in self-esteem across the adult life course. In fact, past studies have provided evidence of stability (Brandstädter & Greve, 1994; Collins & Smyer, 2005), declines (Robins et al., 2002), and increases (Gove, Ortega, & Style, 1989) in self-esteem during old age. These apparently disparate findings suggest that there may be substantial heterogeneity in the population with respect to self-esteem trajectories throughout adulthood, with some adults experiencing declines in self-esteem during the aging process, and others growing older without accompanying declines in self-esteem (Nelson & Dannefer, 1992).

A second inconsistency involves the association between race and self-esteem. Given their substantial social status disadvantages, one might expect the self-esteem of blacks to be lower than that of whites. However, reviews of several studies on race differences in self-esteem conclude that despite these social status disadvantages, black adults tend to have levels of self-esteem that are at least as high as whites (Gray-Little & Hafdahl, 2000).

On the basis of research to date, therefore, it seems as if at least some older adults are able to protect their sense of self-worth in the face of normal aging-related challenges, and that black Americans, on the whole, are able to protect their self-worth in the face of substantial disadvantages in social status. These general conclusions have prompted many to begin the important work of searching for the specific strategies that older adults and blacks may use to protect their feelings of self-worth in the face of major life challenges (Dietz, 1996; Sneed & Whitbourne, 2001; Twenge & Crocker, 2002). Nevertheless, while it is important to gain a firm understanding of how people adapt to the challenges of aging and minority status, it is also important to recognize that several basic unanswered questions regarding the relationships between aging, race, and self-esteem remain.

Much of what we currently know about the associations between aging, race, and self-esteem is based on cross-sectional data. This is problematic because within this context, age effects on self-esteem can only be assessed by comparing levels of self-esteem between persons of different ages. Therefore, while data from cross-sectional samples suggest that levels of self-esteem in older adults are at least as high as levels of self-esteem in younger and middle-aged adults, these findings are not necessarily a reflection of stability in self-esteem within-persons during the aging process. The assessment of such within-persons differences in self-esteem requires longitudinal data. Moreover, longitudinal data allow for the examination of between-persons differences (e.g., race differences) in these within-persons trajectories of self-esteem (Hox, 2002). We suspect that when individuals are observed over time, previously unrecognized age and race-based stratification with respect to self-esteem will become evident.

## Age Differences in Self-Esteem

The effects of aging on one's sense of self have been a topic of keen interest among researchers for many years (Giarrusso, Mabry, & Bengtson, 2001), yet valid inferences about the relationship between aging and self-esteem remain elusive (Demo, 1992). Some reviews of research on the association between age and self-esteem have concluded that self-esteem either remains fairly stable throughout adulthood (Bengtson, Reedy, & Gordon, 1985; Demo, 1992), or increases gradually throughout adulthood (Giarrusso et al., 2001). This notion of a stable, or gradually increasing, sense of self-worth across the life course is consistent with

theories of adult development which suggest a growing acceptance of one's self throughout the life course (Gove et al., 1989). Furthermore, this pattern of stability or increasing self-esteem is consistent with theories focusing on the improved emotional coping skills that are developed during the aging process (Brandtstädter & Greve, 1994; Collins & Smyer, 2005).

Other theoretical perspectives, supported by recent empirical evidence, suggest a much different pattern of association between aging and self-esteem. In particular, structural role theory (Rosow, 1985), as well as the age-related decline hypothesis (Mirowsky & Ross, 1992), suggest that self-esteem is shaped by the acquisition and loss of social roles. Because role gains are common in early adulthood, and role losses are common in later life (Baltes & Smith, 1999; Pearlin & Yu, 2000), this point of view would seem to predict a pattern of increasing self-esteem in young adulthood followed by a decrease during old age. Recent cross-sectional studies have provided some empirical support for the pattern predicted by role theory (McMullin & Cairney, 2004; Robins et al., 2002). In addition, some recent longitudinal studies on age-related changes in psychological well-being have shown a similar pattern of late life decline, both with respect to positive affect (Charles, Reynolds, & Gatz, 2001) and life satisfaction (Mroczek & Spiro, 2005). It is possible that these observed declines in positive affect and life satisfaction among older adults are partially the manifestation of concurrent declines in key psychological resources, such as self-esteem. Indeed, drawing from role theory, notions of age-related declines in functional capacity, and these previous findings regarding trajectories of psychological well-being, our first hypothesis is that over time, self-esteem will generally increase for younger adults; in contrast, older adults will exhibit baseline levels of self-esteem that are similar to, or higher than, their younger counterparts, but over time, self-esteem will decline among older adults.

### Race Differences in Self-Esteem

Many scholars contend that perceptions of one's self mediate the association between social structure and subjective well-being (George, 2000). For this reason, understanding race differences in self perceptions is an essential step towards understanding racial differences in subjective well-being. Several studies have examined race differences in the two major perceptions of the self: control beliefs and self-esteem. Research on race differences in personal control beliefs indicates the presence of substantial and persistent deficiencies with respect to control beliefs among blacks compared to whites (Shaw & Krause, 2001). This deficiency is in large part explained by black disadvantages in critical socioeconomic and health resources (Shaw & Krause, 2001). Research examining race differences in self-esteem, however, suggest that these resource disadvantages among blacks may not compromise feelings of self-worth as they do feelings of personal control (Gray-Little & Hafdahl, 2000; Twenge & Crocker, 2002).

Findings such as these have prompted scholars to speculate about the strategies that black Americans use to protect their sense of self worth in the face of substantial social structural disadvantages. Theoretical explanations for the relatively high levels of self-esteem among black Americans have been quite diverse. One explanation focuses on black culture and its endorsement of collectivism and individualism. While many investigators characterize black culture as collectivistic (Allen & Bagozzi, 2001), a recent meta-analysis indicates higher levels of individualism among blacks compared to whites (Oyserman, Coon, & Kimmelmeier, 2002). Accordingly, Twenge and Crocker (2002) suggest that blacks may maintain high levels of self-esteem in spite of disadvantaged conditions because of this strong endorsement of a culture of individualism. In particular, individualism is associated with relatively high levels of self-esteem because within individualistic cultures, people tend to construe their own successes and failures as being independent of the outcomes of others. Thus, a strong sense of individualism among blacks may allow them to maintain a relatively stable sense of self-esteem

that is not entirely dependent upon external conditions affecting blacks as a group (Twenge & Crocker, 2002).

An alternative perspective focuses on the adaptive coping resources and strategies commonly used by blacks in the face of stressful conditions. Many of these strategies, such as the preservation of group or racial identity, system blame attributions, family support, and religiosity, could be expected to be strong sources of self-esteem among blacks (Neighbors, 1990). For example, black Americans may protect their sense of self-worth by attributing their disadvantaged status to a racist social system, rather than personal shortcomings. Others have also suggested that the creation of an autonomous black culture and racial identity are responsible for the relatively high levels of self-esteem among blacks (Taylor & Walsh, 1979), in that such autonomy may not only contribute to a sense of pride in oneself, but may also allow blacks to derive their self-esteem largely through comparisons with other blacks in similar socioeconomic positions, rather than the larger society.

Nevertheless, because very little previous research on race differences in self-esteem has examined individuals over extended periods of time, the extent to which these cultural practices and coping strategies enable blacks to maintain relatively high levels of self-esteem over time is currently unclear. Viewed broadly, the theory of cumulative disadvantage would seem to suggest that the negative impacts of living with disadvantaged conditions are likely to grow over time (Ross & Wu, 1995). That is, while blacks may be relatively successful at protecting their self-esteem in the face of resource deficiencies for a period of time, this ability may erode as these deficiencies persist or perhaps even intensify. On this basis, our second hypothesis is that average self-esteem levels will be equivalent between blacks and whites; however, blacks' structural disadvantages will result in less favorable self-esteem trajectories over time compared to whites.

## Race Differences in Aging and Self-Esteem

Questions about the sustainability of black Americans' abilities to protect self-esteem in the face of structural disadvantages become even more relevant when the effects of aging on self-esteem are considered simultaneously. Indeed, consistent with the double-jeopardy hypothesis (Ferraro & Farmer, 1996), the compounding effects of aging-related losses and a life history of race-based discrimination could potentially lead to an emergence, and perhaps a deepening, of deficiencies in self-esteem among blacks during later life. Normative aging-related losses that may be particularly likely to contribute to race differences in self-esteem include declines in physical health and functioning, declines in financial standing, and the surrendering of social roles, such as a withdrawal from the labor force due to retirement or disability. Losses in each of these domains have been linked with self-esteem (Krause, 1987; Menaghan, 1989; Yang, 2006), and also appear to be predictive of declines in self-esteem during the aging process (Collins & Smyer, 2005). At the same time, race differences in the extent to which these losses lead to declines in self-esteem are likely because age-related declines in physical health and financial standing, as well as withdrawals from the workforce, occur more readily among blacks than whites (Bound, Schoenbaum, & Waidmann, 1996; Ferraro & Farmer, 1996; Schieman & Campbell, 2001).

In addition, race differences in the effects of aging-related losses on self-esteem could occur if common aging-related changes challenge the self-esteem of blacks more than whites. This might happen, for instance, if the losses of autonomy that are associated with these aging-related changes overwhelm or compromise the previously effective coping strategies used by black Americans to protect their self-esteem. For example, a job loss due to retirement or disability may essentially erase the elevated sense of individualism among blacks that had previously protected their self-esteem, and may lead to a construal of self-esteem that is more

reflective of the disadvantaged status of blacks as a group. For these reasons, our third hypothesis is that race differences in self-esteem trajectories will widen with increasing age, resulting in expanding self-esteem stratification in old age.

## Method

### Sample

The data for this study come from four waves of a nationwide panel study, Americans' Changing Lives (House, 2008). This study began in 1986 with face-to-face interviews of a probability sample of 3,617 adults aged 25 and over. African-Americans and persons over 60 were each sampled at twice the rate of others in the target population. The overall response rate was 68% in 1986. Approximately 83% of surviving baseline respondents (N=2,867) were re-interviewed in 1989. Additional interviews took place in 1994 with 2,562 respondents (83% of survivors), and in 2001–02 with 1,787 respondents (about 76% of survivors).

The current study uses only those respondents who self-identified as non-Hispanic black or non-Hispanic white (n=3,497; 97% of the original sample). Of these respondents, 42.3% (n = 1,472) participated in all 4 waves, 32.9% (n=1,143) died sometime during the follow-up period, and the remaining 24.8% (n=863) were non-respondent at 1 or more waves. The final analytic sample included a total of 10,197 observations of the original 3,497 respondents, for an average of 2.9 observations per respondent. A total of 38 observations were omitted (0.6% of all observations) because of insufficient data on self-esteem. As shown in Table 1, the sample was 37.3% male, 66.4% white, and had an average age at baseline of 53.94 years (SD = 17.59). The average level of education in this sample at baseline was 11.49 years of schooling (SD = 3.42).

Although the data for this study includes oversamples of blacks and older adults, we chose not to weight the data on the following grounds. First, although there is a consensus for weighting data in generating descriptive statistics for a given target population, there is no such agreement in multivariate analyses (Gelman, 2006). Second, many of the attributes (e.g., race, age) upon which unequal selection probabilities were based were explicitly included in the multivariate analyses. When sampling weights are solely a function of independent variables included in the model, unweighted OLS estimates are preferred because they are unbiased, consistent, and have smaller standard errors than weighted estimates (Winship & Radbill, 1994).

### Measures of Time-Varying Variables

Respondents' beliefs about their own general self-worth were measured with two items from Rosenberg's (1965) global self-esteem scale: 1) "At times, I think I am no good at all"; and 2) "All in all, I am inclined to feel that I am a failure". Responses were coded on a four-point scale, including "Strongly agree" (1), "Agree somewhat" (2), "Disagree somewhat" (3), and "Strongly disagree" (4). At each wave, a *self-esteem* index was created by computing a mean across the two items. Reliability scores were computed at each wave using the Werts et al. (1974) formula. According to this analysis, the reliabilities of the two-item index of self-esteem at each wave were: 0.70, 0.73, 0.77, and 0.77.<sup>1</sup>

Three time-varying predictors of self-esteem were also included in this study. *Functional status* was measured with a four-level Guttman-type scale, with the lowest score indicating

<sup>1</sup>A third item from the Rosenberg scale, "I take a positive attitude toward myself", was included in the survey. This item was recoded so that higher scores reflected a stronger perception of self-worth and was included to make a three-item self-esteem index. The Cronbach's alphas for this index at each successive wave were: 0.57, 0.60, 0.58, and 0.58. Because these measures of internal consistency reliability were somewhat low, latent variable measurement models were estimated to examine the factor loadings of each of the items. This analysis revealed that the factor loading of the reverse coded item was only about .4. Therefore, we dropped this item from the index.



severe impairment (i.e., confinement to a bed or chair, and/or major difficulty bathing), and the highest score indicating no impairment. Financial standing was represented with a two-item measure of *financial stress*. Respondents were asked: 1) “How satisfied are you with your current financial situation?”; and 2) “How difficult is it for you to meet the monthly payments on your bills?”, and responses were coded on a five-point scale, ranging from “Completely satisfied” to “Not satisfied at all”. An index was created by computing a mean across responses to these questions. Lastly, a measure of *work status*, indicating whether an individual was working for pay (1) or not (0) at a given wave, was included.

### Measures of Time-Constant Variables

*Baseline age* was measured continuously, in years. In addition, *race* was measured as a binary variable (1= non-Hispanic black; 0=non-Hispanic white). Ninety-five otherwise eligible respondents who self-identified as American Indian, Hispanic, Asian, or “other” were excluded from the analysis. Additionally, all analyses controlled for *gender*, which was measured as a binary variable (1=male; 0=female), and *education*, which was measured as a continuous variable, representing the total number of years of completed schooling.

### Data Analysis

The analyses for this study proceeded in three main stages, coinciding with the study hypotheses. One additional stage of analysis was also conducted in order to examine the third hypothesis in further depth.

**Hypothesis 1**—The first stage of analysis focused on estimating changes in self-esteem within individuals over time, and testing for associations between these changes and age at baseline. Hierarchical linear modeling (HLM) – with occasions of measurement nested within individuals – was used for this purpose (Raudenbush & Bryk, 2002). We modeled self-esteem as a function of timing of the observation (measured in months since baseline, and centered on the sample mean) according to the following model:

$$\text{Self - Esteem}_{ij} = \beta_{00} + \beta_{01}\text{Baseline Age}_i + \beta_{02}X_i + \beta_{10}\text{Time}_{ij} + \beta_{11}\text{Baseline Age}_i \times \text{Time}_{ij} + u_{0i} + u_{1i} + \varepsilon_{ij} \quad (1)$$

This model included several critical fixed effects and two important random effects. In particular,  $\beta_{00}$  was a fixed effect which represented the average self-esteem score at the mean follow-up time for the sample as a whole. Another fixed effect,  $\beta_{10}$ , represented the average within-person change in self-esteem over time for the sample. Furthermore,  $\beta_{01}$  was a fixed effect testing for age differences in average levels of self-esteem across the study period, and  $\beta_{11}$  tested for age differences in individual slopes of self-esteem throughout the study period. The random effects,  $u_{0i}$  and  $u_{1i}$ , represented the degree to which respondents’ self-esteem scores at the intercept, and change rates, deviated from the mean. These random effects were used to determine whether the data included between-persons variance with regard to trajectories of self-esteem.

This initial model also adjusted for the effects of several variables, including gender, education, and attrition due to death or non-response. These variables were represented in Equation 1 by the term  $\beta_{02}X_i$ . Attrition was accounted for with two dummy variables: one identifying respondents who died before the fourth wave, and the other identifying respondents who dropped out of the study for other reasons, either temporarily or permanently. Inclusion of these variables allowed us to control for potential differences in the trajectories of these groups.

**Hypothesis 2**—In the second stage of these analyses, race was added as a time-constant predictor. Like baseline age, race was included both as a main effect and as an interaction with time since baseline. This model was designed to test for race differences in both average levels and trajectories of self-esteem, while controlling for the potentially confounding effects of gender, education level, and attrition.

**Hypothesis 3**—Following this, an interaction between baseline age and race was included in the model. The age by race interaction tested for race differences in the association between baseline age and average levels of self-esteem across the study period. In addition, a three-way interaction between baseline age, race, and time tested for race differences in the association between baseline age and changes in self-esteem throughout the study period. In other words, this interaction term tested the hypothesis that late life changes in self-esteem were more pronounced for blacks compared to whites.

**Additional analyses**—Finally, three time-varying predictors – functional status, financial strain, and work status – were added to the model in order to test the extent to which they mediated the effects of age, race, and time on self-esteem. To reduce ambiguity in the implied direction of causation between two variables measured at the same point in time, we used lagged time-varying covariates (Shaw & Spokane, 2008). In particular, as an extension of the work of Yang and George (2005), our models included two types of time-varying predictors. The first set of time-varying predictors represented each respondent's score on a predictor during the prior wave. Associations between these so-called "lagged" time-varying predictors and self-esteem represented the relationship between functional status, financial strain, or work status at a given point in time, and self-esteem at the subsequent wave. The second set of time-varying variables represented the change in a given predictor between the current and prior wave. Because data for financial strain from Wave 4 was not available at the time of this study, a change score for this construct could not be included. The associations between the change variables for financial status and work status and self-esteem represented the relationship between transitions in these predictors since the prior observation point, and self-esteem at a given point in time. It should be noted that because the use of lagged predictors requires that respondents have complete data for at least two consecutive waves of data collection, the available sample for these supplementary analyses dropped from 3,478 to 2,851 respondents. Compared to those cases who were retained for the supplemental analyses, cases who were dropped were older, more likely to be black, more likely to be male, and had lower self-esteem (actual results not shown).

During this stage of analysis, we also examined the associations between age, race, and self-esteem that were originally assessed in the prior stages of analysis. If previously significant age or race differences in self-esteem were no longer significant after inclusion of a time-varying predictor, we could conclude that a given time-varying predictor was partially responsible for that age or race difference. We also tested for age and race differences in the associations between the time-varying predictors and self-esteem to provide even further insight into the role that these predictors might play in creating age and race differences in self-esteem.

## Results

### Hypothesis 1

The results from the first multilevel model addressing Hypothesis 1 appear in the first column of Table 2. Here, the coefficient associated with Time since baseline was positive ( $b = .049$ ;  $p \leq .001$ ), indicating a clear pattern of increasing self-esteem within individuals over the course of the 16-year study. We should note that in addition to this linear model, we tested a nonlinear

model by adding a quadratic term ( $\text{Time}^2$ ) to Equation 1, but this term was not statistically significant. For this reason, all subsequent analyses specified only a linear pattern of change in self-esteem.

Further examination of the results of this initial model suggested that the general pattern of steady increases in self-esteem was not shared by all adults. In particular, after controlling for the effects of gender, education, and attrition, this model showed evidence of significant age differences in the nature of self-esteem changes observed over time which seem to support Hypothesis 1. For example, while the main effect of age was positive ( $b = .041$ ;  $p \leq .01$ ), signifying a higher mean level of self-esteem among older adults at the intercept, the interaction between baseline Age and Time in this model was negative and highly significant ( $b = -.067$ ;  $p \leq .001$ ). As shown in Figure 1, this means that among progressively older age groups, the linear slopes representing self-esteem changes over time flattened, and ultimately became negative. Additional hand calculations of simple slopes based on the estimates provided in this model (see Aiken & West, 1991) suggest that the shift from a positive to a negative self-esteem trajectory occurred between the baseline ages of 66 and 67.

### Hypothesis 2

In the second column of Table 2, the race variable was included in order to test for black-white differences in average levels, and rates of change, in self-esteem. According to this model, average levels of self-esteem were equivalent between black and white adults. However, at odds with our Hypothesis 2, this equality with respect to self-esteem appears to have persisted over time, as this model provided no evidence of systematic race differences with respect to the rate of change in self-esteem over the course of the study period.

### Hypothesis 3

The final model in Table 2 examined the interactions between baseline age and race. These results provided no evidence of an age by race interaction with respect to levels of self-esteem. In other words, average levels of self-esteem at the intercept appeared to be equivalent between blacks and whites among all age groups. In contrast, a significant age by race interaction did appear with respect to within-persons changes in self-esteem. The coefficient associated with this three-way interaction ( $\text{Age} \times \text{Race} \times \text{Time}$ ) was negative ( $b = -.025$ ;  $p \leq .01$ ), indicating that the age differences in the slope of self-esteem depicted in Figure 1 were stronger among blacks compared to whites. In support of Hypothesis 3, and as depicted in Figure 2, this means that the decline in self-esteem observed during later life began earlier and was steeper in blacks compared to whites. In fact, hand calculations based on the estimates from this model suggest that the shift from a positive to a negative self-esteem trajectory occurred more than 10 years earlier for blacks (between the baseline ages of 59–60) than whites (between ages 71–72).

Finally, we should note that in each of the models of Table 2, the random effects associated with both the intercept and slope remained highly significant. In fact, accounting for age and race appears to have explained only about 10% of the differences in self-esteem levels observed across persons, and did not account for any additional between-persons variation in self-esteem slopes.

### Additional Analyses

In order to gain insight into why blacks and whites may differ with respect to trajectories of self-esteem at various ages, additional analyses incorporating time-varying predictors were carried out. The results of these analyses appear in Table 3. The first model presented in this table was essentially the same as Model 3 from Table 2, with two important exceptions. First, this model, like each of the models in Table 3, was estimated using only those respondents with valid data on at least two consecutive waves. This was necessary in order to incorporate



the lagged time-varying predictors that are the focus of the subsequent models in this table. Also, this model, along with all of the models in Table 3, adjusted for baseline self-esteem. This is necessary because when using lagged predictors, the dependent variable must begin with Wave 2 outcomes which were predicted by Wave 1 independent variables. Model 1 was included in Table 3 to serve as a basis for comparison with the subsequent models that incorporated time-varying predictors.

The second column of Table 3 presents the results of a model that incorporates time-varying functional status, and its interactions with age and race. The results of this model provide evidence of a positive association between functional status at a given point in time (higher scores represent less impairment), and levels of self-esteem at the subsequent observation period ( $b = .028$ ;  $p \leq .05$ ). In addition, recent changes in functional status were positively associated with self-esteem ( $b = .021$ ;  $p \leq .05$ ). This suggests that a late life decline in self-esteem may be at least partially due to a decline in functional status that is common in late life.

However, age-related differences in trajectories of self-esteem (Age  $\times$  Time interaction), as well as race differences in the association between age and trajectories of self-esteem (Age  $\times$  Race  $\times$  Time interaction), were still highly significant in the model that included functional status. That is, accounting for the effects of functional status on self-esteem did not substantially alter the relatively rapid declines in self-esteem exhibited by older adults, and especially older blacks.

In the third column of Table 3, a model including the time-varying financial strain variable is presented. Again, a strong association between this variable and subsequent self-esteem was evident ( $b = -.058$ ;  $p \leq .001$ ). The presence of financial strain at a given wave was associated with lower levels of self-esteem at a subsequent wave. Again, however, inclusion of financial strain into this model did not appear to alter, or explain, the effects of age and race on self-esteem levels or rates of change.

In the fourth column of Table 3, a model including time-varying work status is presented. Like the other time-varying predictors, working for pay appeared to be strongly and positively associated with subsequent self-esteem ( $b = .133$ ;  $p \leq .001$ ). Moreover, work status transitions were also associated with self-esteem such that a recent loss of paid work was predictive of lower self-esteem. Similar to the other time-varying predictors, work status accounted for only a small proportion of the observed age differences in self-esteem trajectories over time (i.e., the Age  $\times$  Time interaction is reduced from  $-0.059$  in Model 1 to  $-0.045$  in Model 4, a decline of 23.7%).

On the other hand, work status appeared as if it may be at least partially responsible for the interaction between age, race, and time depicted in Figure 2. In fact, the Age  $\times$  Race  $\times$  Time interaction term was reduced by about 21.4% (i.e., from  $-0.028$  in Model 1 to  $-0.022$  in Model 4) and became non-significant when time-varying work status was included in the model. Further examination of this model provided a possible explanation for this pattern of findings. In particular, the race by lagged work status interaction in this model ( $b = .068$ ;  $p \leq .05$ ) suggested that the association between working for pay and self-esteem was slightly greater for blacks compared to whites. Taken together, this suggests that part of the reason why blacks may have experienced more rapid declines in self-esteem during late life relative to whites is because withdrawals from the labor force, which are common during this stage of life, were more damaging to the self-esteem of blacks than whites.

## Discussion

This research was designed to further our knowledge of how self-esteem changes over the adult life course, with a particular interest in changes that take place during later life, as well as race

differences in these changes. The use of multi-wave longitudinal data, collected over a 16-year period from a nationally representative sample of adults represents a significant methodological advance in this area of research, as it allowed us to assess both within-persons changes, and between-persons differences, in self-esteem. Much of the previous research on life course changes in self-esteem has been based on cross-sectional data or data covering relatively short periods of follow-up, and the findings from these studies have been inconclusive, perhaps due to the limitations of these data.

A lack of consensus regarding how self-esteem changes over the adult life course may also be due to an increasing variability in self-esteem at progressively older ages (Trzesniewski, Donnellan, & Robins, 2003). Such expanding heterogeneity is consistent with more general aging theories suggesting that as people age, differences between them become more pronounced (Nelson & Dannefer, 1992). And indeed, throughout our analyses for the current study, we consistently found significant between-persons variability with respect to average levels of self-esteem as well as rates of change, even after adjusting for several demographic characteristics and time-varying covariates. In the midst of such heterogeneity, it is therefore not surprising that previous research has produced inconsistent results regarding the normative patterns of change in self-esteem over the adult life course.

Despite this challenge, the current study revealed several important findings regarding the associations between age, race, and changes in self-esteem. First, while we observed a general pattern of increasing self-esteem during the 16-year study period, underlying this trend we found systematic variation linked to baseline age. On average, self-esteem increased across the study period for young and midlife adults, but was fairly stable for individuals who began the study in early old age. For individuals in their late 60's or older at baseline, the average self-esteem trajectories over time were increasingly negative. In other words, this study suggests that despite considerable variability in self-esteem levels and rates of change throughout the life course, a general pattern of early adulthood increases and late life decreases is apparent.

This finding is important from both methodological and conceptual standpoints. From a methodological perspective, this finding highlights the added value of assessing within-persons changes in self-esteem over an extended period of time when studying the effects of aging on self-esteem. In previous research using only the first two waves of the Americans' Changing Lives study, the effects of aging on self-esteem were assessed by comparing mean levels of self-esteem between waves and across age groups (Collins & Smyer, 2005). This analysis revealed only small declines in self-esteem during later life. However, by extending the follow-up period, and estimating within-person changes in self-esteem as we have done in the current study, we were able to uncover evidence of substantial declines in self-esteem during old age. This finding helps to substantiate similar findings from a variety of recent cross-sectional studies (McMullin & Cairney, 2004; Robins et al., 2002; Schieman & Campbell, 2001).

From a conceptual standpoint, this apparent decline in self-esteem during later life is important as it prompts us to join others (e.g., Robins et al., 2002) in raising questions about the long-held belief that older adults are largely able to maintain a positive sense of self-worth even when facing the immense challenges of aging (Collins & Smyer, 2005). Alternatively, declining levels of self-esteem during late life may not necessarily be indicative of an inability to adapt to the challenges of aging, but rather a normal age-related shift towards a more balanced view of oneself that includes the acceptance of one's personal limitations (Robins et al., 2002). Considering these alternative explanations, the extent to which late life declines in self-esteem negatively impact health and well-being is an open question that should be a priority for future research.

Our findings regarding race differences in self-esteem also highlight the advantages of long-term, within-persons analyses, and raise questions about the abilities of blacks to maintain their relatively high levels of self-esteem throughout the aging process. Consistent with previous scholarly work in this area (Gray-Little & Hafdahl, 2000; Twenge & Crocker, 2002), our study found no evidence of blacks' disadvantages in average levels of self-esteem at the intercept, or with respect to average rates of change in self-esteem throughout the study period. These findings would seem to support the idea that resource disadvantages among blacks do not compromise feelings of self-worth like they do to other psychological resources, such as feelings of personal control (Shaw & Krause, 2001).

However, new insights into the association between race and self-esteem emerged when examining the combined influence of age and race on self-esteem changes. In particular, our findings revealed that the self-esteem of blacks declined earlier, and at a faster rate during old age compared to whites. In fact, the transition from increasing or stable self-esteem to decreasing self-esteem appears to have occurred more than 10 years earlier for blacks (i.e., after age 59) compared to whites (i.e., after age 71). Moreover, an examination of the simple slopes used to create Figure 2 shows that for individuals who were 85 years old at baseline, the predicted rate of decline in self-esteem was more than 3 times as fast for blacks ( $b = -0.155$ ) compared to whites ( $b = -0.042$ ). This would appear to be a stark difference, especially considering that these analyses controlled for several possible confounders, including education, attrition, and mortality. Consistent with the double jeopardy hypothesis, such a steep decline in self-esteem during later life among blacks suggests that the cultural traditions and coping strategies that are so seemingly effective in sustaining self-esteem during much of the adult life course may falter when race-based disadvantages are compounded by the challenges of aging (Ferraro & Farmer, 1996).

In an effort to gain a more precise understanding of why self-esteem declines in late life, especially among blacks, we investigated the effects of three potential age-related challenges – functional limitations, financial strain, and withdrawals from the work force – that have well-established associations with self-esteem (Collins & Smyer, 2005). While our study provided strong evidence of self-esteem declining in response to each of these challenges, none of these challenges appear to account fully for the observed declines in self-esteem during later life. Nevertheless, of the three challenges included in this study, departures from the work force appear to have played the most substantial role in explaining these declines. Slightly more than one-fifth of the age differences in slopes of self-esteem over time, and an equivalent proportion of the race differences in the effects of age on self-esteem slopes throughout this study period, were accounted for after adjusting for work status at a prior wave, as well as changes in work status since the preceding wave. Furthermore, our findings suggest that work status may have a stronger influence on the self-esteem of blacks compared to whites. Given that departures from the work force are likely to become increasingly prevalent during the latter stages of the life course, it may be that the particularly steep declines in self-esteem among blacks during old age are at least partially the result of blacks' self-esteem declining to a greater extent than whites' in response to these departures from the work force.

The question of why the self-esteem of blacks may decline more than that of whites in the wake of departures from the work force is a topic that ought to be examined in future research. In particular, future research should examine whether job losses, themselves, negatively influence the self-esteem of blacks, or whether it is the social world that older blacks enter following a job loss that is responsible for the observed declines in self-esteem. Perhaps, for example, older whites have more options than older blacks for living a productive and rewarding retirement life, due in part to race-based differentials in retirement-based resources, such as pensions.

In addition, future research should examine precisely which specific types of work status transitions have the strongest ties to the self-esteem of both blacks and whites. Previous research suggests that retirement transitions actually tend to have positive influences on self-esteem (Reitzes, Mutran, & Fernandez, 1996). Therefore, our current findings showing a reduction in self-esteem following departures from the work force could simply be an indication of the negative consequences of involuntary job loss, in particular.

In assessing the current findings and contemplating future directions of research in this area, this study's key limitations must be taken into account. Perhaps the most important limitation of the current study concerns the way in which self-esteem was measured. In particular, the current study focuses on a measure of global, rather than domain-specific, self-esteem. This is potentially problematic given that feelings of self-worth are likely to vary across different domains of life in important ways (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995). Indeed, the utility of global measures of self-esteem is a topic of current debate (Krueger, Vohs, & Baumeister, 2008; Swann, Chang-Schneider, & McClarty, 2007). More specifically, critics of global self-esteem point to its lack of association with specific behaviors, and thus question its usefulness in understanding and explaining human behavior (Krueger et al., 2008). Nevertheless, we feel that global self-esteem is still important given its strong associations with indicators of subjective well-being, such as happiness, depressive symptoms, and life satisfaction (George, 2000).

Also, according to the work of Shahani and colleagues (Shahani, Dipboye, & Phillips, 1990), the self-esteem measure used in the current study represents only one of two factors measured in the full Rosenberg Self-Esteem Scale (1965). In particular, the negatively worded items used to measure self-esteem in this study would appear to represent the so-called "self-derogation" factor of esteem, and not the so-called "self-enhancement" factor. Although some research suggests that these two factors are theoretically indistinguishable (Carmines & Zeller, 1979), one must be cautious in assuming that the trajectories found in our study are representative of what would be found when using measures of the self-enhancement dimension, or the full Rosenberg scale.

Also, our examination of race differences in aging and self-esteem has, out of necessity, restricted its focus on blacks versus whites. As Twenge and Crocker (2002) have demonstrated, a comprehensive analysis of race differences in self-esteem requires that attention also be given to other racial/ethnic groups, such as Hispanics, Asians, and American Indians, each of whom appear to show distinct patterns of self-esteem over time. Unfortunately, the data available for the current study did not include sufficient numbers of cases in these groups to allow for a rigorous analysis of these differences.

Moreover, although the original sample that provided data for this study closely resembled the U.S. adult population, because of dropout, we were forced to exclude about 18% of the sample from the analyses involving time-varying covariates. The excluded cases were systematically different from those who were retained; however, excluding these cases did not appear to alter the associations between age, race, and self-esteem, as the results from Model 3 in Table 2 and Model 1 in Table 3 were found to be quite similar. Nevertheless, we should also note that because of attrition, the number of repeated measures of our key study variables differed systematically across respondents. Although Hox (2002) demonstrates that within the context of multilevel analysis this type of systematic attrition often does not lead to biased estimates, readers should be aware that systematic attrition did take place.

The potential confounding of aging and cohort effects must also be highlighted. In particular, because this study followed individuals from different birth cohorts over time, age variations were observed both within and between persons. Readers should be clear not to attribute

findings of age differences in this study to changes within persons over the life course, as these differences could also reflect differences between distinct birth cohorts (Lynch, 2003). For example, while the current findings show evidence of declines in self-esteem occurring at younger ages among blacks compared to whites, it is not certain that future cohorts of young blacks will also exhibit this relatively early decline when they reach later life.

Finally, we note that despite finding significant age- and race-based differences in the trajectories of self-esteem, and even after accounting for select time-varying predictors, substantial between-persons heterogeneity in the trajectories of self-esteem remained unaccounted for by our models. In fact, our most complete models presented in Table 3 only explained about 40% of the between-persons variance in levels of self-esteem, and between 15–23% of the variance in self-esteem slopes. Therefore, those interested in learning more about why some individuals are able to maintain relatively high levels of self-esteem throughout life, while others are not, would be wise to explore additional predictors of self-esteem, such as stressors and social relationships (Krause, 1987), physical activity (McAuley, Blissmer, Katula, Duncan, & Mihalko, 2000), and other leisure or social activities (Reitzes, Mutran, & Verrill, 1995).

Recognizing these limitations should help to shape interpretations of this study's substantive findings, but should not overshadow them. In particular, we hope that our detection of sharp declines in self-esteem during later life, especially among blacks, prompts others to examine the health and well-being effects of such declines, and where appropriate, work on the development of interventions to bolster self-esteem, or control its loss, in these groups. As this study's additional analyses suggest, interventions focusing on the potentially damaging effects of later life departures from the work force may warrant special consideration.

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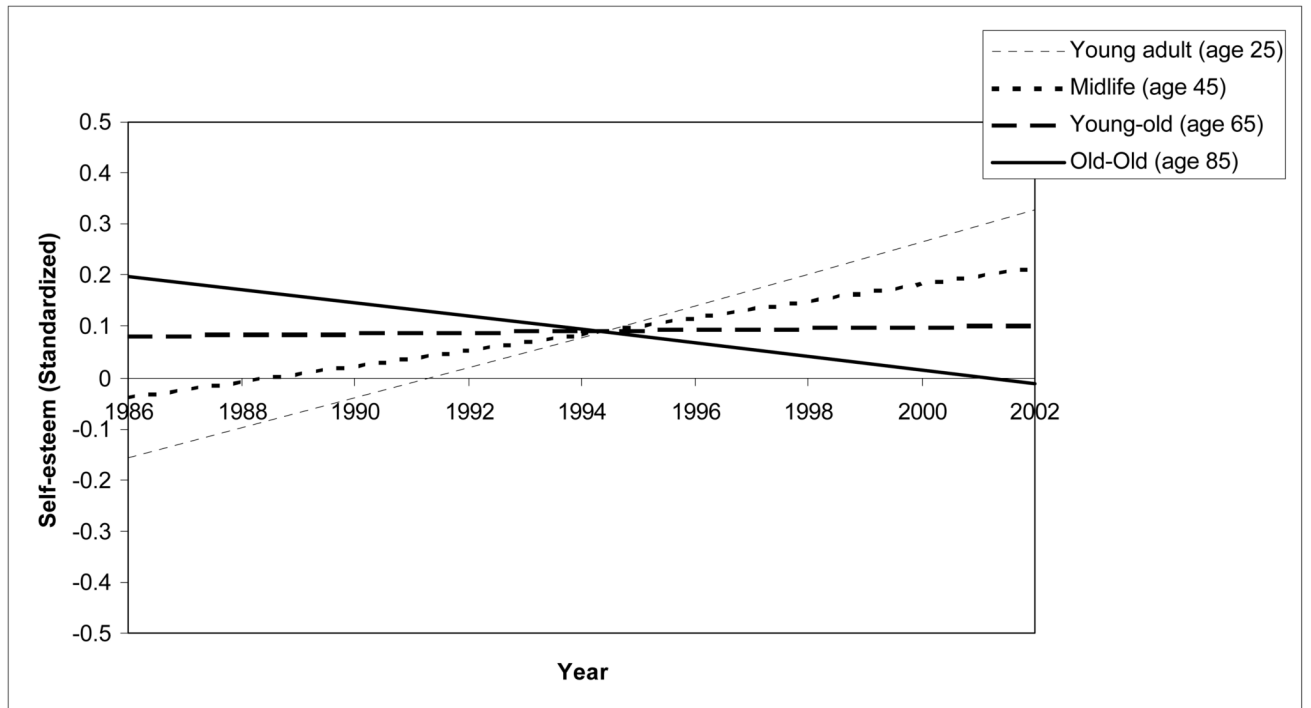
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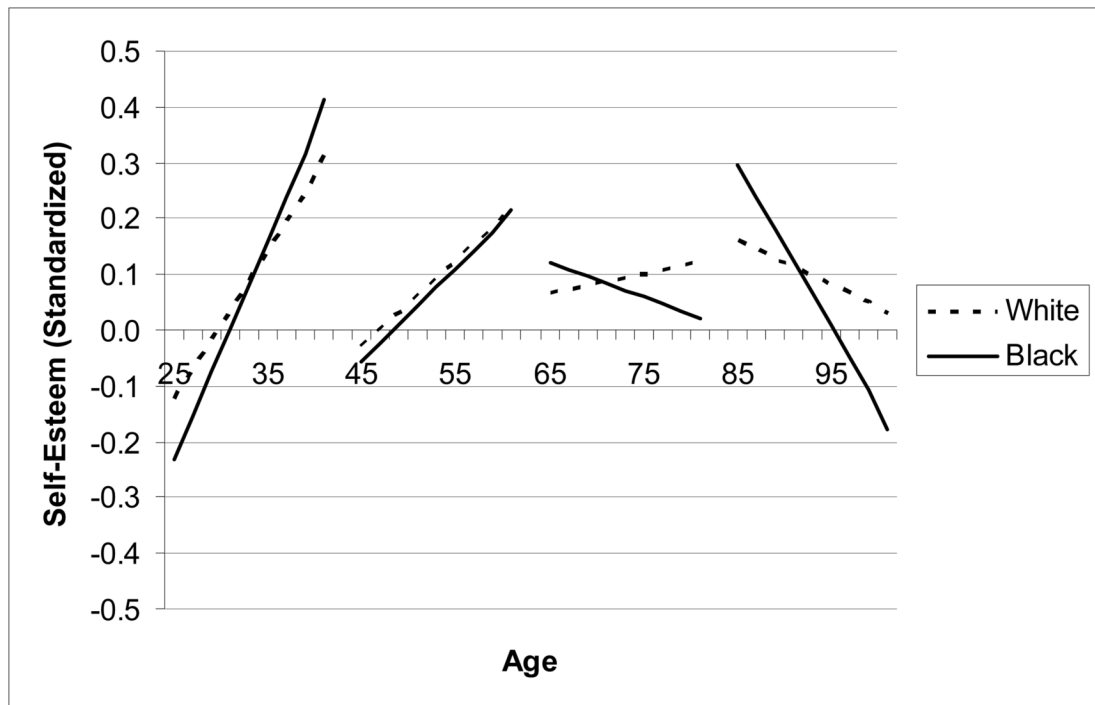


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**Figure 1.**  
Predicted Self-Esteem Trajectories by Baseline Age



**Figure 2.**  
Predicted Self-Esteem Trajectories by Baseline Age and Race.

Table 1

Descriptive Statistics (Mean/(SD)) for Key Measures by Age and Race

Measures	Total n=3,497	Black n=1,174	White n=2,323	Age 25-44 n=1,260	Age 45-64 N=1,044	Age 65+ n=1,193
Baseline age	53.94 (17.59)	52.60 (17.33)	54.61 (17.69)	33.78 (5.59)	56.36 (6.05)	73.11 (6.33)
Black	.34 (.47)	---	---	.36 (.48)	.35 (.48)	.29 (.46)
Male	.37 (.48)	.34 (.47)	.39 (.49)	.42 (.49)	.39 (.49)	.31 (.46)
Education	11.49 (3.42)	10.39 (3.74)	12.04 (3.11)	13.00 (2.45)	11.33 (3.35)	10.04 (3.70)
Baseline self-esteem	3.34 (.78)	3.30 (.83)	3.37 (.75)	3.30 (.78)	3.40 (.76)	3.34 (.78)
Died (between baseline and 2002)	.33 (.47)	.37 (.48)	.31 (.46)	.05 (.22)	.28 (.45)	.67 (.47)
Non-respondent (between baseline and 2002)	.25 (.43)	.33 (.47)	.20 (.40)	.36 (.48)	.22 (.42)	.16 (.36)



**Table 2**

Parameter estimates and robust standard errors for multilevel regression models predicting self-esteem from 1986–2002.

Independent Variables	Model 1	Model 2	Model 3
	b (SE)	b (SE)	b (SE)
Intercept ( $\beta_{00}$ )	0.061 <sup>***</sup> (0.014)	0.060 <sup>***</sup> (0.014)	0.061 <sup>***</sup> (0.014)
<i>Time-constant predictors</i>			
Baseline Age ( $\beta_{01}$ )	0.041 <sup>**</sup> (0.015)	0.041 <sup>**</sup> (0.015)	0.039 <sup>*</sup> (0.016)
Race ( $\beta_{02}$ )		-0.0004 (.013)	-0.004 (.013)
<i>Time-varying predictor</i>			
Time since baseline ( $\beta_{10}$ )	0.049 <sup>***</sup> (0.013)	0.049 <sup>***</sup> (0.014)	0.047 <sup>***</sup> (0.014)
<i>Interactions</i>			
Age $\times$ Race ( $\beta_{03}$ )			0.010 (.014)
Age $\times$ Time ( $\beta_{11}$ )	-0.067 <sup>***</sup> (0.009)	-0.067 <sup>***</sup> (0.00)	-0.072 <sup>***</sup> (0.010)
Race $\times$ Time ( $\beta_{12}$ )		-0.001 (0.008)	-0.009 (0.010)
Age $\times$ Race $\times$ Time ( $\beta_{13}$ )			-0.025 <sup>**</sup> (0.010)
<i>Random effects</i>			
Variances (% explained)			
Intercept	0.311 <sup>***</sup> (10.37)	0.311 <sup>***</sup> (10.37)	0.311 <sup>***</sup> (10.37)
Slope	0.018 <sup>***</sup> (0.00)	0.018 <sup>***</sup> (0.00)	0.018 <sup>***</sup> (0.00)

*Notes:* Models control for attrition and mortality status, gender, and education. Also, the inferences drawn from these models utilize the robust standard errors produced by hierarchical linear modeling because they are somewhat tolerant of violations to the assumption of normally distributed response variables (Hox, 2002). Finally, to compute the percentage of explained variance, we used as a benchmark variances from a model including only the intercept and time.

\*  $p \leq .05$

\*\*  $p \leq .01$

\*\*\*  $p \leq .001$ .

**Table 3**

Parameter estimates and robust standard errors for multilevel regression models predicting self-esteem from 1989–2002.

Independent Variables	Model 1	Model 2	Model 3	Model 4
	b (SE)	b (SE)	b (SE)	b (SE)
Intercept	0.122*** (0.017)	0.110*** (0.017)	0.110*** (0.017)	-0.111*** (0.020)
<i>Time-constant predictors</i>				
Baseline Age	0.002 (0.018)	-0.032* (0.016)	-0.057*** (0.016)	-0.002 (0.018)
Race	-0.015 (0.016)	-0.024 (0.015)	-0.014 (0.015)	-0.015 (0.014)
<i>Time-varying predictors</i>				
Time since baseline	0.048** (0.017)	0.048** (0.017)	0.044** (0.017)	0.057*** (0.017)
Functional status (lagged)		0.028* (0.013)		
Δ Functional status		0.021* (0.010)		
Financial strain (lagged)			-0.058*** (0.013)	
Work status (lagged)				0.133*** (0.033)
Δ Work status				0.091** (0.030)
<i>Interactions</i>				
Age × Race	0.005 (0.016)	-0.008 (0.015)	-0.005 (0.015)	0.010 (0.019)
Age × Time	-0.059*** (0.011)	-0.055*** (0.012)	-0.051*** (0.011)	-0.045*** (0.012)
Race × Time	0.004 (0.011)	0.002 (0.011)	0.006 (0.011)	0.011 (0.011)
Age × Race × Time	-0.028* (0.012)	-0.025* (0.012)	-0.026* (0.012)	-0.022 (0.012)
Age × Functional status (lag)		-0.002 (0.013)		
Race × Functional status (lag)		-0.001 (0.013)		
Age × Δ Functional status		0.006 (0.011)		
Race × Δ Functional status		0.007 (0.011)		
Age × Financial strain (lag)			0.016 (0.013)	
Race × Financial strain (lag)			0.015 (0.012)	
Age × Work status (lag)				-0.043 (0.034)
Race × Work status (lag)				0.068* (0.034)
Age × Δ Work status				-0.027 (0.035)
Race × Δ Work status				0.036 (0.029)

	Model 1	Model 2	Model 3	Model 4
<b>Independent Variables</b>	<b>b (SE)</b>	<b>b (SE)</b>	<b>b (SE)</b>	<b>b (SE)</b>
<i>Random effects</i>				
Variances (% explained)				
Intercept	0.295*** (13.24)	0.202*** (40.59)	0.197*** (42.06)	0.199*** (41.47)
Slope	0.013** (0.00)	0.010* (23.08)	0.011* (15.38)	0.010* (23.08)

Notes: Models control for attrition and mortality status, self-esteem at baseline, gender, and education. Also, the inferences drawn from these models utilize the robust standard errors produced by hierarchical linear modeling because they are somewhat tolerant of violations to the assumption of normally distributed response variables (Hox, 2002). To compute the percentage of explained variance, we used as a benchmark variances from a model including only the intercept and time.

\*  $p \leq .05$

\*\*  $p \leq .01$

\*\*\*  $p \leq .001$