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Improving Expectations Regarding Aging in Younger Adults: A Classroom Study

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Abstract

Younger adults generally hold negative attitudes and stereotypes about aging, which can affect the success with which they age as well as how they interact with older generations in everyday settings. The current study sought to improve expectations about aging in a largely first-year undergraduate student population through a small, discussion-based course on successful aging. Students in the successful aging course and a control course completed the 12-item expectations regarding aging (ERA) scale at the beginning and the end of the 10-week academic quarter. Students in the aging class also provided adjectives that came to mind when thinking about older adults. Students in the successful aging course had higher ERA scores at the end of the quarter than at the beginning of the quarter, but scores in the control class did not change. Further analyses indicated students' expectations about cognitive functioning and physical health improved, but not expectations about mental health. In addition, self-generated adjectives were more positive at the end than the beginning of the quarter, but some negative adjectives persisted. Thus, a smaller, discussion-based class about aging led to a more positive view of aging, suggesting that negative attitudes about aging may be modifiable by a short intervention in early adulthood. These results can have implications for how younger adults interact with older adults and how they may prepare for, hold future expectations about, and ultimately experience older age.

Keywords

expectations regarding aging; stereotypes; aging education; attitudes toward aging

Negative attitudes and low expectations about aging are related to worse cognitive, mental, and physical health outcomes in older adulthood (Breda & Watts, 2017; Levy et al., 2002; Lineweaver et al., 2009), but these attitudes are often shaped early in life (Gilbert & Ricketts, 2008). Unfortunately, young adults typically hold negative attitudes about aging and endorse misconceptions and negative stereotypes about a variety of domains of older adulthood (Barnett & Adams, 2018; Richeson & Shelton, 2006; Silver et al., 2016). For

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example, when asked to assign an age to both positive (e.g., witty, active) and negative (e.g., lonely, stubborn) stereotypes about older adults, younger adults assign significantly lower ages to stereotypes than older adults (Hummert et al., 1995), suggesting that they think of older adults as being old at earlier ages.

Research has shown that endorsement of negative stereotypes can transform into self-fulfillment of these stereotypes as we age (Levy, 2009). Levy (2003, 2009) has proposed the stereotype embodiment theory, which posits that attitudes and expectations shape how stereotypes manifest, and negative stereotypes are turned into everyday behaviors that lead to worse outcomes. Stereotype embodiment theory thus suggests that young adults who hold negative beliefs about aging may retain and internalize those attitudes into older age. Importantly, in older age, lower expectations about aging are related to negative outcomes including worse physical health and lower cognitive functioning (Lineweaver et al., 2009; Sarkisian, Prohaska, et al., 2005). It seems that attitudes and beliefs about aging can be shaped early in life, carried into adulthood, and can then affect the success with which one ages.

In addition to affecting outcomes on an individual level, negative attitudes about aging can shape the way younger adults interact with and perceive older adults and may even result in lower likelihood to work with older adults (e.g., Voogt et al., 2008). In medical domains, one study suggested that primary care physicians' negative expectations about aging are related to the way they treat patients (Davis et al., 2011). For example, if a physician agrees that loneliness and depression are normal parts of older age, they may be less likely to recommend the patient speak to a therapist. Another study found that medical students with more negative attitudes about aging are less likely to consider geriatric medicine as a career (Voogt et al., 2008). Older adults could be at a disadvantage as younger generations of medical professionals who may hold negative attitudes about aging enter the workforce, while the need for geriatric care continues to rise (World Health Organization, 2018).

Even in non-medical settings, negative attitudes toward older age held by younger adults may lead to bias or even discrimination. In fact, over one third of adults over age 65 report having experienced age discrimination (Rippon et al., 2014). Employers contribute to patterns of age discrimination, perceiving older adults as more costly and less productive (Conen et al., 2012), and this can affect the way older adults are treated. For example, employers' or managers' stereotypes about age can influence their attitudes about training and promoting older adults in the workplace (Chiu et al., 2001) and the severity of consequences for poor performance, but this is especially true for younger managers (Rupp et al., 2006). Improving negative expectations and stereotypes about aging in a young adult college sample may help improve interactions with older adults in a variety of domains, such as in the workplace and in medical domains, and help shape the experience of younger adults as they age. In a classroom setting, we sought to improve expectations about aging in college students through participation in a class on successful aging.

A variety of studies have attempted to improve attitudes about aging in younger adults. In one study, students and middle-aged adults' expectations regarding aging improved after reading narratives describing older adults who were aging well (Bardach et al., 2010).

Another study conducted a 90-minute group session on healthy aging and showed that some (but not all) attitudes about aging improved (Seah et al., 2019). Thus, it seems that attitudes about aging are malleable, and targeted interventions can improve attitudes or expectations about aging.

One possible explanation for younger adults' negative attitudes toward aging is that they stem from a lack of knowledge or holding inaccurate perceptions. Indeed, many younger adults do hold inaccurate perceptions of aging, for example believing that happiness declines across the lifespan (e.g., Lacey et al., 2006), when happiness actually increases from middle age into older age (Carstensen et al., 2000; Castel, 2018; Costa et al., 1987). These kinds of misconceptions may relate to negative attitudes or stereotypes, like believing older people are lonely or depressed. Thus, many studies have attempted to improve attitudes about aging by improving aging knowledge. Unfortunately, while knowledge of aging tends to improve after instruction, attitudes do not (Aud et al., 2006; O'Hanlon & Brookover, 2002; Stuart-Hamilton & Mahoney, 2003; but see Cottle & Glover, 2007). In addition, there is evidence to suggest that knowledge and attitudes are not always reliably correlated (e.g., Boswell, 2012; Stahl & Metzger, 2013). Therefore, it seems that simply teaching people about what happens during aging, such as specific physiological, cognitive, or social changes that occur is not enough to change their attitudes, stereotypes, or expectations, and there is a need to go beyond knowledge-based instruction by incorporating discussion-based activities, challenging commonly-held beliefs, and providing positive examples of aging to improve attitudes about aging.

Some studies have been successful in using these nonknowledge-based educational methods to improve attitudes about aging. For example, recent hands-on, interactive classes utilizing intergenerational service-learning (learning outside the classroom while helping the community; see Cohen et al., 2006) have led to improvements in students' attitudes about aging (Leedahl et al., 2019; Tullo et al., 2018). Contact with older adults has been shown to predict interest in aging and aging-related work (Gorelik et al., 2000), and students who have participated in intergenerational learning report gaining a better understanding of older adults through experience and increasing empathy toward older adults through contact with them (Leedahl et al., 2020). Unfortunately, these classes often require many financial and physical resources (e.g., older adult participation, community partnerships, funding for travel) and may reach only a few students and older adults. In addition, the students who enroll in these kinds of courses likely already have a strong interest in working with older adults or gaining volunteer hours, so the general student population is less likely to take such an involved course.

Other research has highlighted the importance of challenging previously held beliefs through discussion when attempting to change attitudes. For example, one study implemented an intergenerational service learning program wherein students interacted with older adults through classroom discussions and seminars and found that students reported learning different perspectives, and the experience led to a breakdown of stereotypes about aging (Dupuis, 2002). Another study showed that discussing beliefs about aging after learning about the myths and realities of getting older led to improved attitudes about aging at a one-month follow-up compared to only learning the information or learning the information and

discussing a different topic afterward (Ragan & Bowen, 2001). Thus, open discussion and challenging commonly-held beliefs and stereotypes about aging may be a crucial aspect of improving expectations or attitudes about aging in a learning environment without relying on more involved service-learning methodology.

The Current Study

In the current study, we sought to examine if expectations regarding aging can be influenced by taking a Psychology course about aging, in which students openly discuss the aging process but are not explicitly instructed about what happens when people get older or tested on specific aging knowledge. Students completed the 12-item Expectations Regarding Aging survey (ERA; Sarkisian, Steers, et al., 2005) at the beginning of the 10-week academic quarter (pre time point) and again at the end (post time point). A class from another department served as a comparison group. Participants enrolled in the aging class also provided words that came to mind when they thought about older adults at both time points, which allowed us to assess changes in stereotypes about aging. We hypothesized that expectations about aging and stereotypes toward older adults would improve due to active discussion about the aging process that allows students to relate information to themselves and draw on their own experiences and existing knowledge.

Method

Participants

Participants were 78 University of California, Los Angeles (UCLA) undergraduate students enrolled in either a Psychology class about successful aging (n = 39) or a class in the civic and environmental engineering department (n = 39) during two academic quarters. Of the 78 students who provided data during the pre time point, 29 in the aging class and 32 in the control class provided data at the post time point. Attrition was due to students either dropping the class or being absent on the day of data collection. While demographic information was not collected to maintain anonymity, most students in both the control and aging class were first-year students, as both classes were part of a *Fiat Lux* Freshman Seminar Program, which was designed to bring faculty and a small group of first-year students together to engage in meaningful discussions on a range of topics. Participation in the study was voluntary, was not tied to students' grades, and the study was approved by the UCLA Institutional Review Board.

Classroom Characteristics

The aging class was advertised to students as focused on aging as characterized by changes rather than only declines. The course covered topics such as happiness, memory, humor, habits, and retirement and reviewed well-known examples of successful aging (e.g., John Wooden, Maya Angelou). The class was designed for first-year students as a seminar-style class, rather than a traditional lecture-style class, such that active discussion was encouraged and students were not presented with formal lecture slides in class, although there was some initial commentary provided by the instructor. Additionally, students were not formally tested on their knowledge of the material or concepts. Instead, many classes began with a

brief introduction to a topic, followed by open discussion related to readings students had completed or about students' own experiences with older adults. Small group activities were then followed by comments regarding current relevant research findings and real-world applications and examples.

In terms of assessment, students' main assignments were readings, which largely came from the book, *Better with Age: The Psychology of Successful Aging* (Castel, 2018), as well as other short articles. Students wrote two short papers giving their thoughts and opinions about readings they completed during the quarter, and the course was graded on a pass or fail basis, rather than a letter grade basis. The control class was also a first-year seminar class with a similar schedule and grading scale, so students were likely similar in composition in the two classes. Importantly, while both classes were graded on a pass/fail basis and there were no formal tests, the courses provide honors credit and are advertised as being on par with graduate classes. Thus, students who chose to enroll in either class were likely high-achieving and eager to learn.

Materials and Procedures

To assess students' attitudes about aging, students completed the ERA scale (Sarkisian, Steers, et al., 2005). With many available measures of attitudes about aging (see Lin et al., 2011), we chose this measure of attitudes for a few reasons. First, many commonly-used scales were created decades ago (e.g., Kogan, 1961; Rosencranz & McNevin, 1969; Tuckman & Lorge, 1953), when current older adults were younger adults, but attitudes toward older adults and the types of negative stereotypes held by younger adults have likely changed since then. In addition, the ERA was designed so that it does *not* assess knowledge about aging and, therefore, has no right or wrong answers. Finally, the ERA is more sensitive to how one expects to age themselves, which can be more related to stereotypes and internalizing behavior (e.g., Levy, 2003). Participants rate items like, "When people get older, they need to lower their expectations of how healthy they can be" and "I expect that as I get older, I will become more forgetful" on a 1 (*definitely true*) to 4 (*definitely false*) scale, with higher scores indicating higher expectations about aging. The ERA is made up of three subscales: physical health, cognitive functioning, and mental health. All students completed the ERA during the first week of classes (pre time point) and again 10 weeks later during the last week of classes (post time point).

At both time points, students in the aging class also listed 10 adjectives that came to mind when thinking about "older adults" as a measure of stereotypes, and five people (friends, family, or public figures) who they considered "role models of successful aging." The control class did not complete this activity because we were most interested in qualitative changes in the aging class. At the post time point, students in the aging class also rated how engaged they had been during the class throughout the quarter on a 1 (*not at all engaged*) to 10 (*very engaged*) scale and how frequently they did the readings for the class on a 1 (*never*) to 10 (*always*) scale.

Results

Expectations Regarding Aging

Expectations regarding aging (ERA) scale raw scores were converted to a 100-point scale, with higher scores indicating higher expectations about aging. IDs were not assigned in the control class for logistical reasons, so we were unable to match responses from each time point to specific participants in this class, but IDs were assigned for the aging class. Therefore, we treated the data as between subjects with time point and class as the independent variables and ERA score as the dependent variable.

First, to ensure that scores did not differ by the academic quarter in which they were collected, we conducted a 2 (Class: aging, control) X 2 (Time point: pre, post) X 2 (Quarter) ANOVA. The 3-way interaction between class, time point, and quarter would reveal whether the interaction between class and time point is different between the two quarters in which data were collected. The results showed that the 3-way interaction was not significant, $F(1, 131) = 1.77$, $p = .19$. In addition, the main effect of quarter was not significant, $F(1, 131) = 1.40$, $p = .24$, and quarter did not interact with class, $F(1, 131) = 0.15$, $p = .70$, or with time point, $F(1, 131) = 0.01$, $p = .94$. Thus, all subsequent analyses were collapsed across quarter.

Total ERA scores for the aging and control classes at each time point are shown in Figure 1. To assess differences between classes and time points on total ERA scores, we conducted a 2 (Class: aging, control) X 2 (Time: pre, post) ANOVA, which revealed a main effect of time point, $F(1, 135) = 6.15$, $p = .01$, $\eta^2 = 0.04$, such that scores were higher at the post time point ($M = 59.37$, $SD = 13.78$) than at the pre time point ($M = 53.53$, $SD = 13.79$). There was also a significant main effect of class, $F(1, 135) = 8.63$, $p = .004$, $\eta^2 = 0.06$, such that the aging class ($M = 59.91$, $SD = 13.93$) had higher ERA total scores than the control class ($M = 52.99$, $SD = 13.84$). Of most interest, the interaction between time point and class was significant, $F(1, 135) = 5.58$, $p = .02$, $\eta^2 = 0.04$. Follow-up Tukey's HSD tests were used for all post-hoc analyses. These revealed that at the pre-assessment time point, ERA scores were not significantly different in the aging class ($M = 54.20$, $SD = 13.78$) and the control class ($M = 52.85$, $SD = 13.78$), $t(76) = 0.46$, $p = .97$, $d = 0.10$, but at the post assessment, the aging class ($M = 65.61$, $SD = 13.78$) had significantly higher total ERA scores than did the control class ($M = 53.13$, $SD = 13.78$), $t(59) = 3.32$, $p = .003$, $d = 0.91$.

Table 1 shows the means and standard deviations for each class and time point for the three subscales (i.e., cognitive functioning, physical health, mental health). Subscale scores, like total ERA scores, are on a scale from 0 to 100, with 0 being the lowest expectations and 100 being the highest. To examine whether there was a change in each subscale score across time point and whether that depended on class, three 2 (Class: aging, control) X 2 (Time: pre, post) ANOVAs were conducted. On the physical health subscale, the aging class ($M = 52.18$, $SD = 17.72$) had higher overall scores than the control class ($M = 44.69$, $SD = 17.63$), $F(1, 135) = 6.23$, $p = .01$, $\eta^2 = 0.04$. In addition, students at the post time point ($M = 52.53$, $SD = 17.57$) overall had higher scores than at the pre time point ($M = 44.34$, $SD = 17.54$), $F(1, 135) = 7.45$, $p = .01$, $\eta^2 = 0.05$. The interaction was also significant, $F(1, 135) = 4.48$, $p = .03$, $\eta^2 = 0.03$. The pattern was the same as that of the total ERA scores; at the pre time point, there were no differences between the aging class and the control class, $t(76) = 0.27$, p

= .99, d = 0.06. However, at the post time point, the aging class had significantly higher physical health scores than the control class, $t(59) = 3.09$, $p = .01$, $d = 0.79$.

Next, looking at the cognitive functioning subscale, we found that the main effect of class was significant, $F(1, 135) = 8.19$, $p = .005$, $\eta^2 = 0.05$, with the aging class ($M = 52.68$, $SD = 17.13$) giving higher ratings than the control class ($M = 44.38$, $SD = 17.02$), as was the main effect of time point, $F(1, 135) = 5.30$, $p = .02$, $\eta^2 = 0.04$, with scores being higher at the post time point ($M = 51.86$, $SD = 16.96$) than the pre time point ($M = 45.19$, $SD = 16.94$). Of most interest, the interaction was significant, $F(1, 135) = 4.83$, $p = .03$, $\eta^2 = 0.03$. As with the physical health subscale, the aging class scores did not significantly differ from the control class scores at the pre time point, $t(76) = 0.50$, $p = .96$, $d = 0.11$, but the aging class gave significantly higher ratings at the post time point than did the control class, $t(59) = 3.38$, $p = .005$, $d = 0.87$.

Finally, there was a different pattern of results for the mental health subscale than for the other two subscales. The main effect of class was not significant, $F(1, 135) = 2.25$, $p = .14$, $\eta^2 = 0.02$, nor was the main effect of time, $F(1, 135) = 0.61$, $p = .44$, $\eta^2 = 0.004$. In addition, the interaction between class and time was not significant, $F(1, 135) = 1.37$, $p = .25$, $\eta^2 = 0.01$, suggesting that the aging and the control class' scores did not differ at the pre or post time point. In other words, the aging class did not improve across time points beyond that of the control class, and scores were similar for the two classes at both time points.

We then assessed the role of students' engagement in the course on their improvement within the aging class only, where we had matched data from the pre to post time point. Students' self-reported engagement scores ranged from 4 to 10 ($M = 8.14$, $SD = 1.48$) and their ratings of frequency of completing the readings ranged from 1 to 10 ($M = 7.21$, $SD = 2.30$), indicating that students were, for the most part, honest about their own engagement in the class. To measure the effect of these two variables (engagement and reading) on improvement in expectations, we calculated ERA difference scores for each participant, and then regressed those difference scores on engagement and reading ratings. The relationship between self-reported engagement and ERA difference scores is depicted in Figure 2. The regression revealed that engagement did not significantly predict ERA difference scores while controlling for reading frequency, $b = 0.74$, $t(26) = 0.38$, $p = .71$, nor did students' frequency of doing the readings while controlling for engagement, $b = -0.88$, $t(26) = -0.67$, $p = .51$. Thus, students' engagement in the class was not a significant predictor of how much their ERA scores improved.

Stereotype Data

To assess students' self-generated adjectives about older adults, we coded all adjectives as either positive (e.g., wise, experienced, family; score of 1), negative (e.g., lonely, slow, forgetful; score of −1), or neutral (e.g., old, time, memory; score of 0). In general, adjectives were described as neutral if they could be interpreted as either positive or negative. For example, "memory" could be generated because the participant is thinking of slowing or failing memory or because it brings to mind happy memories of the past. In addition, a word like "grandparent" carries neither a positive or negative connotation and was treated as neutral. Because not all participants generated 10 adjectives as asked, we calculated each

participant's average valence score. This resulted in a score between −1 and 1, with scores closer to 1 indicating more positive adjectives and scores closer to −1 indicating more negative adjectives, with 0 scores indicating mostly neutral or equal numbers of positive and negative adjectives.

Figure 3 shows the average valence of generated adjectives at each time point. To assess whether valence scores changed across time points, we conducted a dependent-samples t-test, which revealed that scores were higher at the post time point ($M = 0.32$, $SD = 0.32$) than at the pre time point ($M = -0.08$, $SD = 0.37$), $t(25) = 5.02$, $p < .001$, $d = 0.99$. Because averages close to zero could indicate equal numbers of positive and negative adjectives or many neutral adjectives, we next assessed the proportion of positive adjectives at both time points to see if students provided more positive adjectives (or simply fewer negative adjectives) at the beginning or the end of the quarter. We found that students provided a higher proportion of positive adjectives at the post time point ($M = 0.52$, $SD = 0.20$) than at the pre time point ($M = 0.36$, $SD = 0.18$), $t(25) = 3.40$, $p = .002$, $d = 0.67$.

To further examine adjectives, we used a word analyzer, Textalyser (http://textalyser.net/), which provides a ranking of the most frequently occurring words in a body of text. In looking at the adjectives provided at the pre time point, we found the highest frequency word was wise or wisdom, occurring 25 times altogether, meaning over half of the 39 participants in the aging class generated this word. The other top 10 words/phrases that appeared (in order) were: wrinkles, slow/slower, forgetful/forgetfulness, family, retired/retirement, gray hair, time, tired, and health. Some form of "grandparent" (e.g., grandma, grandpa, grandkids) appeared 16 times. Some negative words, like lonely, frail, and death appeared five times each, while positive words (e.g., experience, happy, knowledge) appeared equally often.

The most common word at the post time point was, again, wisdom, appearing 20 times out of the total 29 participants. The next 10 most common words were: retirement/retired, experience/experienced, family, time, slow/slowness/slower, walking, hobbies, loneliness, and grandparent/grandparents. Words like "forgetful" or "forgetfulness" appeared less often at the post time point (4 times) than at the pre time point (9 times). In addition, words describing physical appearance (e.g., wrinkles, gray or white hair) appeared less often (6 compared to 26 at the pre time point). Positive words associated with aging (e.g., experience, hobbies, family) appeared more often at the post time point than at the pre time point.

Discussion

Younger adults hold generally negative attitudes and stereotypes about aging (e.g., Barnett & Adams, 2018; Silver et al., 2016), which can lead to greater endorsement of negative self-stereotypes over time and, thus, negative outcomes (Levy, 2003, 2009). In addition, negative stereotypes and attitudes about aging are associated with bias toward older adults and can affect one's willingness to work with older adults (e.g., Rippon et al., 2014; Voogt et al., 2008). Unfortunately, there is a lack of focus on gerontology and geriatrics in healthcare domains, though the need for this work is growing and is predicted to continue growing in the future (World Health Organization, 2018). Research has found that lack of interest and

enthusiasm for working with older adults is partially driven by negative expectations and stereotypes about aging and acts as a barrier to improving gerontology education in health fields (Bardach & Rowles, 2012). Thus, improving attitudes about aging in younger adults who will soon enter the workforce could help to inspire a greater willingness to pursue gerontology-related careers and contribute to the growing need in a variety of domains.

In the current study, we examined whether expectations about aging could be improved after a 10-week college course on successful aging. We found that students' ERA scores improved from the beginning to the end of the quarter in the successful aging course only, whereas scores did not significantly change over time in the control class. While prior work on the efficacy of classroom instruction to improve attitudes or expectations about aging is fairly mixed (e.g., Aud et al., 2006; Cottle & Glover, 2007; Stuart-Hamilton & Mahoney, 2003; Tullo et al., 2018), we found support for improvements in expectations regarding aging in a young adult population after participation in a class about successful aging. Some evidence suggests that improving knowledge about aging does not always improve attitudes (see Allan & Johnson, 2008; Boswell, 2012; Stahl & Metzger, 2013), so simply instructing students about what happens during aging or lecturing students so they learn general facts about aging is likely not enough to change expectations or attitudes. In the current study, students engaged in open discussion about changes that occur with age rather than passively listening to formal lectures. We suggest that a discussion-based course in which students can learn about both the positives and negatives of aging offered to a first-year student population may be ideal for targeting attitudes or expectations about aging.

We also found that engagement did not influence the extent to which students' expectations improved in the aging class. Thus, students still seem to get the benefit of hearing discussions, even if they aren't as engaged, which likely would not be the case in a larger, lecture-based course. Of note, the students enrolled in this course were mostly first-year college students. These students may be more open to changing beliefs than those later in their college career, as college is often a time when beliefs change (Astin, 1978). While we do not have a comparison group of more advanced college students in this study, it is possible this played a role, and future work can examine the influence of age and student status on attitude changes.

To examine the specific aspects of expectations about aging that improved, we looked at the three ERA subscale scores: cognitive functioning, mental health, and physical health. We found that, in the successful aging class, scores improved from the pre to post time point on the cognitive functioning and physical health subscales, but not on the mental health subscale, which included items about worrying and being lonely. There are a few possible explanations for why expectations about mental health did not improve. First, scores were higher on the mental health subscale than on the other two subscales in both classes at the pre time point, which could suggest students have higher overall expectations about mental health in older age compared to expectations about cognitive and physical health. The lack of change in mental health expectations could also indicate that younger adults have more rigid beliefs about mental health in older age, and these may be more resistant to change. Perhaps students believe, for example, that physical health can be improved by engaging in more physical activity or healthy behaviors throughout the lifespan, but believe that older

adults will tend to worry more, regardless of their lifestyle. There may even be a combination of these factors at play, such that younger adults have more positive expectations about mental health, but these may also be more rigid.

In examining stereotypes about aging, we found that the adjectives students generated about older adults changed from the beginning to the end of the quarter in the aging course. Students generally provided more positive stereotypes, for example having to do with family, hobbies, and staying active (e.g., walking), whereas more negative stereotypes like being forgetful, tired, or having wrinkles or gray hair were generated less often. These open-ended responses can provide more insight into the specific ways in which students' attitudes changed over time. For example, providing words like "hobbies" and "walking" more at the post time point may suggest that students see older adults as more active and engaged as a result of taking the course. In addition, giving fewer words like "gray hair" and "wrinkles" may show that students are less heavily focused on the physical changes associated with age. Topics like the cognitive and physical benefits of walking and staying engaged with friends, family, and hobbies were discussed in readings and class discussion, and students seemed to be generating more positive stereotypes about these topics.

Somewhat surprisingly, however, "loneliness" or "lonely" was provided more often at the end of the quarter than at the beginning. Importantly, this finding indicates that, at the end of the course, students were not simply providing words that were familiar from class discussions. Perhaps the continued inclusion of negative stereotypes by many students suggests that students have more well-rounded views of aging, rather than simply ignoring all negative beliefs they previously held and replacing them with positive beliefs they learned in the class.

Summary and Conclusions

The current study examined changes in expectations regarding aging after taking a 10-week course on the psychology of successful aging. Students' scores improved from the beginning to the end of the academic quarter in this course, but not in a control course. Thus, a smaller, discussion-based course improved expectations about aging in a mostly first-year student population. Future work should examine whether improvements in expectations are related to willingness to work with older adults and extend the findings here to examine larger classes and non-student populations.

Improvements in attitudes or expectations can change not only the ways people think about aging as they get older, but also how they interact with older generations. Classroom-based interventions such as the one described here may lead to more positive approaches to working with older adults, especially in a group of younger adults who will soon enter the workforce in areas ranging from medicine to financial industries. Interventions such as these may improve younger adults' attitudes toward working with older adults in a variety of capacities. Additionally, improved expectations about aging may change the way students approach and ultimately experience older age.

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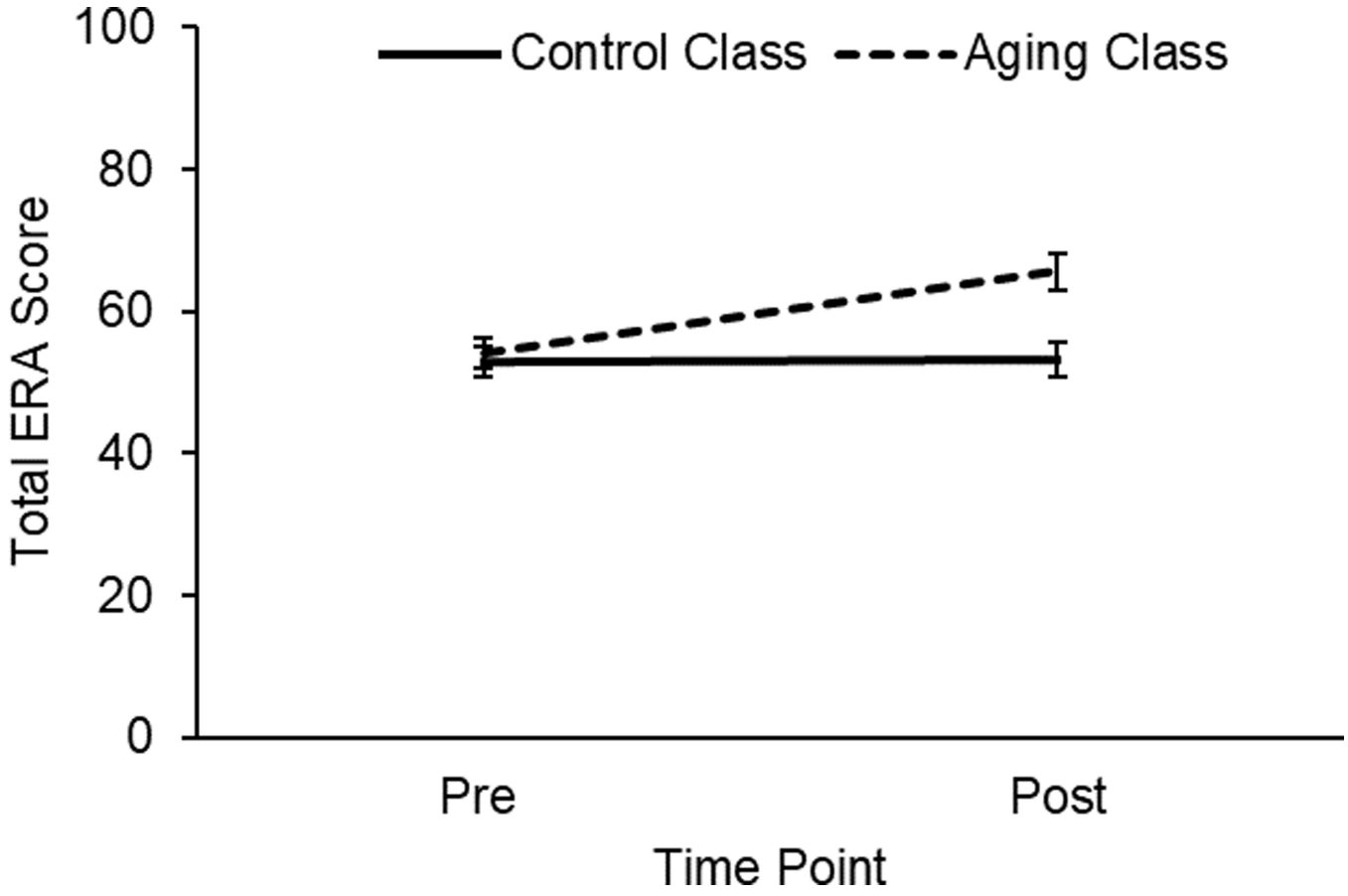

Figure 1.
Average total expectations regarding aging (ERA) scores as a function of type of class and time point. Error bars represent standard error of the mean.

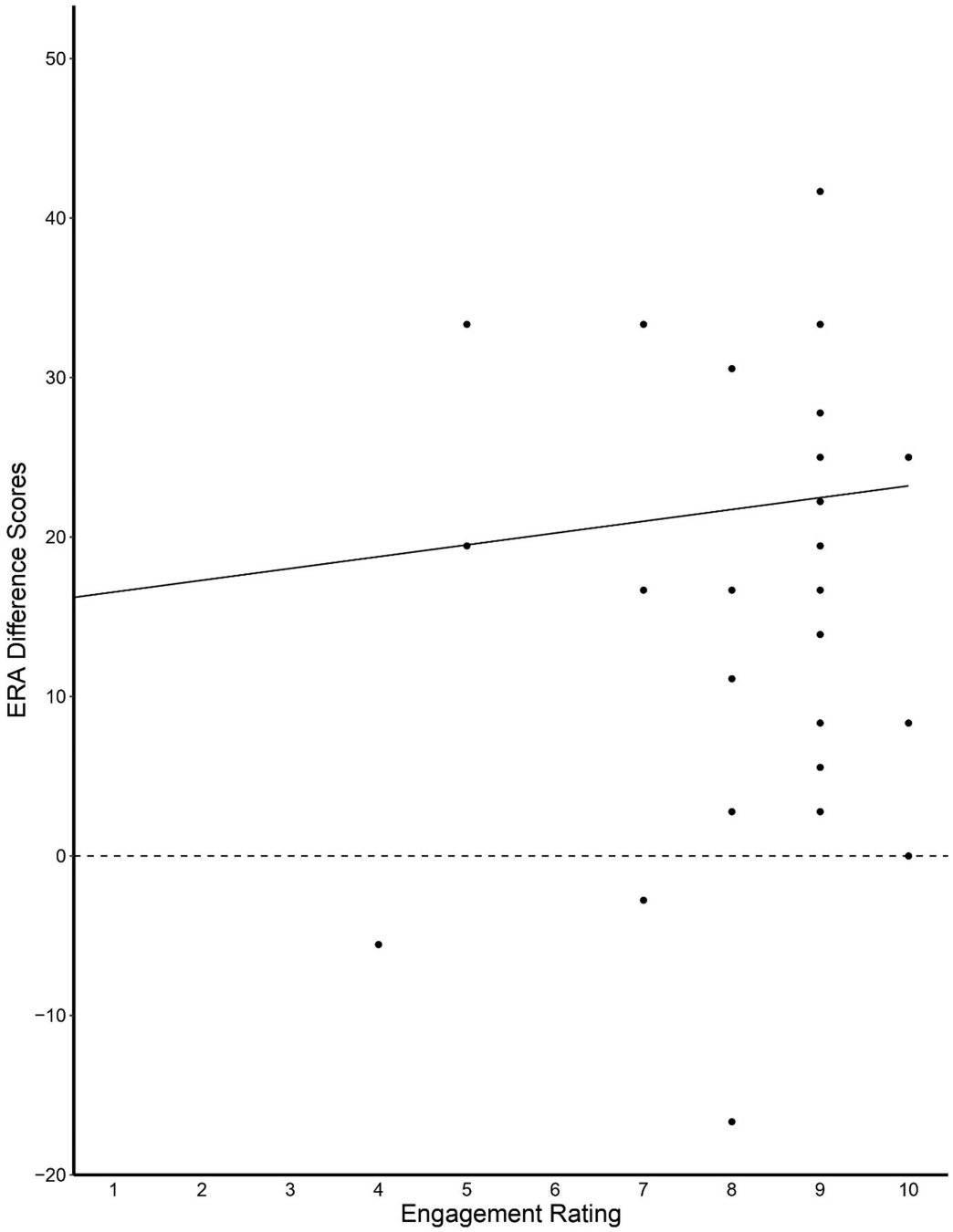

Figure 2.

Change in Expectations Regarding Aging (ERA) score from pre to post time point as a function of engagement rating. ERA difference scores were calculated for each participant by subtracting their ERA total score at the pre time point from their score at the post time point. The solid line shows the regression slope of engagement rating on ERA difference scores, controlling for frequency of completing readings.

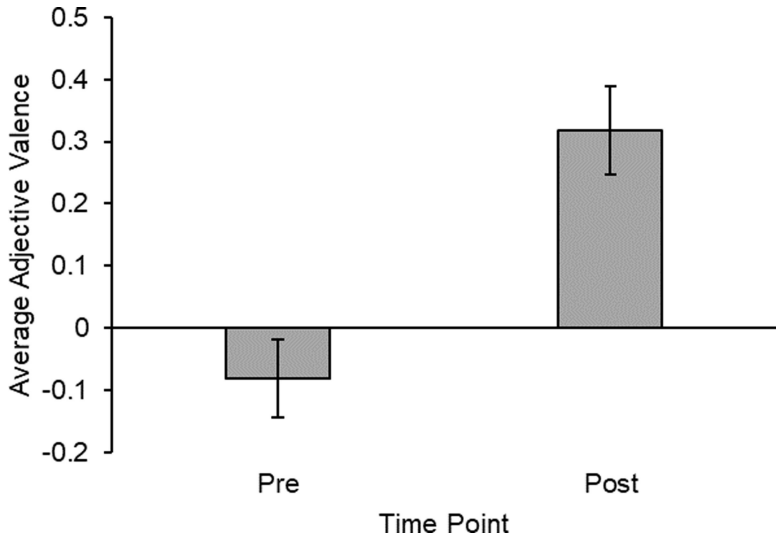

Figure 3.

Average valence of generated adjectives at pre and post time point. Positive adjectives were given a score of 1, negative adjectives were given a score of −1, and neutral adjectives were given a score of 0. Error bars represent standard error of the mean.

Table 1

Expectations Regarding Aging (ERA) Total and Subscale Score Means (and Standard Deviations) by Class and Time Point

	Aging Class		Control Class	
	Pre	**Post**	**Pre**	**Post**
Total ERA Score	54.20 (13.14)	65.61 (13.45)	52.85 (12.91)	53.13 (15.73)
Physical Health	44.87 (17.27)	59.48 (15.22)	43.80 (18.12)	45.57 (19.05)
Cognitive Functioning	46.15 (16.32)	59.12 (16.57)	44.23 (16.35)	44.53 (18.65)
Mental Health	71.58 (20.92)	77.87 (17.29)	70.51 (18.32)	69.27 (18.14)