

Research Article

Age Group Differences in Perceived Age Discrimination: Associations With Self-Perceptions of Aging

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Abstract

Background and Objectives: From midlife onwards, age stereotypes increasingly underlie social judgments and contribute to age-based discrimination. Whereas many studies compare differences between young and older adults in reports of age discrimination or sensitivity to age stereotypes, few consider age group differences among adults over 50. We form subgroups corresponding to social age group membership (early midlife, late midlife, young old, oldest old) and examine differences in reported experiences of everyday age discrimination and associations with self-perceptions of aging.

Research Design and Method: Using cross-sectional and longitudinal data from the Health and Retirement Study (HRS; $N = 15,071$; M Age = 68, range 50–101), multivariate logistic regression was used to examine experiences of everyday discrimination attributed to age, and associations between age discrimination and self-perceptions of aging, in four age groups: early midlife, late midlife, young old, oldest old.

Results: People in the early midlife group (aged 50–59) reported more experiences of unfair treatment than the older age groups but were less likely to attribute their experiences to age discrimination. After controlling for covariates, individuals in all age groups who perceived their own aging positively were less likely to report experiences of age discrimination. The magnitude of this effect, however, was greatest in the early midlife group.

Discussion and Implications: Findings support proposals that midlife is a pivotal life period when individuals adjust to life events and social role transitions. Future longitudinal studies will provide further insight into whether positive self-perceptions of aging are especially important in this phase of the life course.

Keywords: Ageism, Attitudes & Perception toward Aging/aged, Health and Retirement Study, Older Adults

Age, skin color, and gender are rapidly perceived features of a person and basic units of information used in the social judgments and categorizations we make about others (e.g., Fiske, 2010). Research suggests that, because the salience of age in social judgments increases after midlife, the likelihood that individuals will be exposed to ageism in everyday settings increases in later life (North & Fiske, 2012; Palmore, 2005; Pasupathi & Löckenhoff, 2002). Like young adults, older individuals are aware of and often

endorse ageist attitudes and stereotypes and typically utilize strategies to minimize harmful effects and maximize personal well-being (Garstka, Schmitt, Branscombe, & Hummert, 2004; Hummert, 2011). Multiple experimental studies have investigated the effects of ageist attitudes and age stereotypes on the behaviors of others toward older persons and the self-related beliefs and behavior of older adults themselves (e.g., Hess, 2006; Kotter-Grühn & Hess, 2012; Levy, 2003, 2009). Typically, these studies compare

convenience samples of young and older adults or group all people over age 50 or 65 together (North & Fiske, 2013). Relatively little consideration has been given to the possibility that subgroups of older adults over age 50 may be differentially sensitive to age discrimination. We utilize cross-sectional and longitudinal data from the Health and Retirement Study (HRS) to examine open questions about differences in reports of experienced age discrimination and associations with self-perceptions of aging (SPA) in four contemporary social age groups: early midlife, late midlife, the young old, and oldest old.

Age Group Membership and Life Course Transitions

In later life, people transition through socially assigned age groups associated with different social status and roles (Hagestad & Uhlenberg, 2005; Settersten & Mayer, 1997). Midlife is characterized as a pivotal period in the life course (Lachman, Teshale, & Agrigoroaei, 2015). Whereas early midlife (the 50s age decade) corresponds with the expected pinnacle of the work career and participation in the community (Lachman, 2004; Neugarten, 1974), during late midlife (the 60s age decade) most people retire from the productive workforce, move down the social status ladder, and are assigned fewer social roles (Wang, 2007). Re-entering the workforce after retirement, for example, often involves taking a job lower in status than preretirement (Ekerdt, 2010). Together with these socially-defined transitions in midlife, other normative life events in the 50s and 60s decades, such as caring for parents, parental deaths, and children leaving home, contribute to a heightened awareness of one's own aging. The young old (age 70–79) are currently portrayed as the age group with the highest life satisfaction (Stone, Schwartz, Broderick, & Deaton, 2010). The oldest old (people over age 80), however, are thought to be the most socially pitied among older adults due to the high prevalence of widowhood, frailty, and disability in this age group (North & Fiske, 2013).

Various indicators of acquired social status (e.g., education, wealth) do not necessarily overlap with the pattern of assigned age group social status (Alwin & Wray, 2005). For example, people aged 50–59 are currently the most educated segment of the U.S. population over age 50, but due to economic recessions in the first decade of the 21st century they are not the wealthiest (McLeod, 2013). Social stratification theories suggest that members of low status social groups are more likely to be the target of discrimination than people in high status social groups (Fiske, 2010). Thus, differences in indicators of acquired social status may interact with assigned social age group status to create differential perceptions and experiences of discrimination. Of course, the composition of each group is not homogenous: Individuals differ within age groups on numerous risk factors associated with exposure to discrimination, including socioeconomic status, gender, race, health, personal dispositions, and attitudes.

Age Group, Perceived Age Discrimination, and SPA

Competing proposals exist about subgroup differences in actual reports of and reactions to discrimination (e.g., Major et al., 2002). Some researchers suggest that, because of greater exposure, people in low status social groups are more aware of signs of discrimination in social interactions than are individuals in higher status social groups and that this vigilance contributes to more reports of discrimination and higher distress in low status groups. Schmader, Johns, and Forbes (2008) and Steele, Spencer, and Aronson (2002) propose that, if victims accept or assimilate the negative attitudes about their group, they will be especially vulnerable to negative outcomes. In the context of the social status assigned to age groups, this perspective suggests that, compared to midlife age groups, the oldest old group may have a heightened expectation and awareness of age discrimination, interpret the discrimination to be self-relevant, and perceive their own aging negatively (Barber, 2017; Swift, Abrams, Lamont, & Drury, 2017).

Alternatively, other researchers (e.g., Crocker & Major, 1989) suggest that members of stigmatized groups use self-protective strategies to minimize the extent that they personally consider themselves (i.e., some aspect of their appearance or behavior) to be a target of discrimination. Various self-protective strategies have been proposed, including own-group identification or de-identification, attribution of the interaction to the situation or the perpetrator's personality or ignorance, selective comparison of one's own outcomes to others in one's group, and selective devaluation of attributes on which one's own group fares poorly (Crocker & Major, 1989). The use of self-protective strategies contributes to fewer than expected reports of discrimination. This perspective can also be applied to questions about age group differences in perceived age discrimination and associations with SPA. Midlife adults, for example, may distance themselves from negative age-related information and ageist attitudes, and report fewer experiences of age discrimination than older age groups (e.g., Garstka et al., 2004; Kotter-Grühn & Hess, 2012; Weiss & Freund, 2012; Weiss & Lang, 2012). However, research also suggests that positive SPA are maintained until near the end-of-life (Kotter-Grühn, Kleinspehn-Ammerlahn, Gerstorf, & Smith, 2009; Sargent-Cox, Anstey, & Luszcz, 2014). So it is possible that, regardless of age, people who think more positively about their own aging may be less likely to report age discrimination.

Although few studies have examined associations between perceived age discrimination and positive SPA within different age groups over 50, cross-sectional findings linking perceived discrimination with older subjective age (Stephan, Sutin, & Terracciano, 2015) and longitudinal evidence linking negative views of aging with increased perceptions of discrimination over time (Voss, Wolff, & Rothermund, 2017) suggest that how people feel about their own aging may operate in both self-fulfilling and self-protective ways.

The Present Study

This study examines associations between perceived age discrimination and SPA. Specifically, we asked: (a) does the early midlife age group differ from the late midlife, young old, and oldest old age groups in perceptions of age discrimination; and (b) do age peers within age groups who did not report age discrimination have more positive SPA than those who attribute age to be the reason for their experiences of discrimination? Based on literature suggesting that midlife typically involves a time of transition and adjustment (e.g., Lachman et al., 2015), we hypothesized that the early midlife group in our sample would be less likely to attribute discrimination experiences to age than each of the older age groups. Furthermore, because contemporary U.S. middle aged adults are more racially and ethnically diverse and have acquired less wealth than people in older age groups, we expected that the early midlife group would be more likely to attribute experiences of discrimination to socially stigmatized characteristics other than age (e.g., race, wealth, gender). Additionally, based on research suggesting an association between perceived age discrimination and individuals' feelings about their own aging (e.g., Stephan et al., 2015) we hypothesized that, within age groups, individuals who attribute discrimination to their age would hold less positive SPA. This hypothesis was examined in cross-sectional and 4-year longitudinal analyses. We also examined the alternative hypothesis, that more positive SPA would be associated with a lower likelihood of attributing discrimination to age (e.g., Voss et al., 2017). All analyses controlled for other factors related to the risk of discrimination (gender, race, wealth, functional limitations, and work status; Major et al., 2002) and individual dispositions associated with inflated reports of discrimination (depressive symptoms and neuroticism; Han & Richardson, 2015; Sutin, Stephan, & Terracciano, 2016).

Method

Participants

The sample included 15,071 adults aged 50–101 from the 2010 ($N = 7,950$) and 2012 ($N = 7,121$) waves of the HRS,

a longitudinal study of adults in the United States after age 50 ($M = 68$ years; $SD = 10.69$). In each biennial wave of HRS, a rotating random 50% of the core panel participants complete an enhanced face-to-face interview and receive a self-administered Psychosocial and Lifestyle questionnaire to return by mail to the University of Michigan. Measures of everyday discrimination and SPA are included in this questionnaire (Smith et al., 2013). HRS data are publically available for download at <http://hrsonline.isr.umich.edu/>. The sample was reduced by 1,448 respondents (9.61%) because they had incomplete data for one or more measures (1.5% of the sample had missing data for reported discrimination, 0.04% for education, 0.02% for race, 0.01% for employment status, 2.4% for depressive symptoms; 6.69% for neuroticism; there were no missing data for age, marital status, wealth, and functional limitations). The final analytic sample consisted of 13,623 individuals.

The study participants were divided into four groups based on their age: Oldest old (80s+ years; born before 1932), young old (age 70–79; born 1930–1942), late midlife (age 60–69; born 1940–1953), and early midlife (age 50–59; born 1950–1963). Table 1 provides descriptive information for each age group. As expected, groups differ in socio-demographic composition and health due to selective mortality, panel attrition, sampling design, and contemporary changes in the diversity of the United States 50+ population. Specifically, respondents in their 50s and 60s, compared to two older groups, were more likely to be racially diverse, acquired the most years of education, and reported fewer functional limitations. Although participants from the youngest age group were more likely to be employed, fewer were in the upper quintiles of wealth. Also, the youngest group had the highest neuroticism scores compared to all other age groups (all $ps < .001$).

Measures

Perceived Everyday Discrimination

HRS included six items from the Everyday Discrimination Scale (EDS), a widely used measure in epidemiological and public health research (Williams, Yu, Jackson, & Anderson,

Table 1. Socio-Demographic Characteristics for 2010/2012 Waves of HRS Overall and by Age Groups

| | 80s+ | 70s | 60s | 50s | Overall |
|--------------------------------------|-------------|-------------|-------------|-------------|-------------|
| <i>N</i> | 1953 | 3929 | 3788 | 3953 | 13623 |
| Age (<i>M</i>) | 84.49 | 74.15 | 64.22 | 55.14 | 67.35 |
| % women | 57.25 | 56.94 | 59.82 | 59.63 | 58.56 |
| % white | 90.27 | 84.93 | 77.59 | 67.29 | 78.54 |
| % > 12 years school | 43.16 | 41.28 | 52.90 | 57.20 | 49.40 |
| % upper 2 quintiles-wealth | 46.80 | 45.81 | 42.79 | 19.75 | 40.00 |
| % worked for pay | 5.68 | 18.10 | 42.63 | 68.43 | 37.74 |
| % married | 46.49 | 61.49 | 66.16 | 62.21 | 60.85 |
| % ≥ 4 functional limitations | 63.13 | 49.50 | 39.63 | 32.38 | 43.74 |
| % ≥ 4 CES-D symptoms | 17.05 | 14.99 | 14.99 | 19.02 | 16.46 |
| Neuroticism (<i>M</i> , <i>SD</i>) | 1.94 (0.58) | 1.96 (0.59) | 2.02 (0.61) | 2.11 (0.64) | 2.02 (0.62) |

Note: CES-D = Center for Epidemiologic Studies Depression Scale; HRS = Health and Retirement Study. Age Groups: 50s = Early Midlife, 60s = Late Midlife, 70s = Young Old, 80s+ = Oldest Old.

1997). Participants were asked “How often any of the following things happened to you” (6 = *almost every day* to 1 = *never*) in everyday public interpersonal interactions. Three items described experiences of unfair treatment: “You are treated with less courtesy or respect than other people”; “You receive poorer service than other people at restaurants or stores”; and “You receive poorer service or treatment than other people from doctors or hospitals.” Three items described examples of personal rejection: “People act as if they think you are not smart”; “People act as if they are afraid of you”; and “You are threatened or harassed.” A dichotomous index of discrimination was created, coding reported experience of discrimination (i.e., any endorsement greater than “never”) in at least one of the six contexts (1) versus no experiences of discrimination (0). Cronbach’s alpha for the six items was $\alpha = 0.82$.

Participants who reported discrimination on any items were asked a follow-up question “. . . what do you think were the reasons WHY these experiences happened to you.” Eleven reasons were provided: their ancestry/national origin, gender, race, age, religion, weight, physical disability, other aspect of physical appearance, sexual orientation, financial status, and other. Multiple attributions could be checked. For our analyses, we coded responses into five categories: (a) reported discrimination and attributed it to age only, (b) reported discrimination and attributed it to age in combination with other reasons, (c) reported discrimination and attributed it to other reasons but not age, (d) reported discrimination but did not mark any reason, (e) reported no discrimination.

Self-Perceptions of Aging (SPA)

Eight HRS items derived from the Philadelphia Geriatric Center Morale Scale (Lawton, 1975) and the Berlin Aging Study (<http://www.base-berlin.mpg.de/en>) assess participants’ positive and negative evaluations of their personal experiences of aging. Examples of negative items are: “Things keep getting worse as I get older” and “The older I get, the more useless I feel.” Examples of positive items are: “So far, I am satisfied with the way that I am aging” and “I am as happy now as I was when I was younger.” Response categories range from 6 = *strongly agree* to 1 = *strongly disagree*. After reverse coding four negative items, we averaged responses to form a composite score for SPA (higher scores reflected more positive SPA). Cronbach’s alpha for the eight HRS items was $\alpha = 0.81$.

Covariates

Nine covariates known to be associated with discrimination were also included in analyses. Gender was coded: 1 = women, 0 = men; and race was coded: 1 = white, 0 = nonwhite (black, other). Employment status was coded: 1 = currently working, 0 = not working, and marital status was coded: 1 = married, 0 = not married [i.e., widowed, divorced, single]. Education was centered at 12 years (e.g., High School graduation: range = 0 to 17+ years). We used

the RAND HRS imputed composite variable for total household wealth (i.e., aggregated value of housing, stocks and other investments, and personal savings net of total debt). This composite dollar value was entered as quintiles (1 = lowest wealth, 5 = highest wealth), and the highest quintile was used as the reference in regression models. To assess functional limitations, participants were asked if they had difficulty with a list of activities, such as walking one block, climbing stairs, picking up a dime, dressing, using map, taking medications ($M = 4.10$, $SD = 3.91$, range = 0–23; Fonda & Herzog, 2004). A dichotomous index was created, coding for presence of multiple functional limitations if four or more difficulties were reported (1) versus few or no functional limitations (0). A dichotomous index of depression was formed from an 8-item version of the Center for Epidemiologic Studies Depression scale (CES-D; Steffick, 2000; 1 = four or more symptoms, 0 = three or fewer symptoms). We measured neuroticism using the Midlife Developmental Inventory (Lachman & Weaver, 1997). Four items (4-point scale) were reversed scored where appropriate and averaged ($M = 2.02$, $SD = 0.62$, range = 1–4). We also controlled for survey wave (1 = 2012, 0 = 2010).

Analysis Strategy

Participants in their 50s (early midlife) were set as the reference group in all analyses (1 = 80+ years; 2 = 70–79 years; 3 = 60–69 years; 4 = 50–59 years). An initial multivariate logistic regression analysis examined whether age group was a significant predictor of any experience of discrimination ($N = 13,623$). Second, we examined age group differences in attributions for discrimination using a multivariate logistic regression ($N = 13,623$) including demographic and health variables as covariates. Third, we examined relations between SPA and discrimination and attribution status. We conducted a general linear model to examine age group differences in positive SPA between individuals who (a) reported discrimination and either attributed it to their age or (b) other reasons, and (c) who did not report discrimination. Then, using multinomial logistic regression, we examined if positive SPA predicted the likelihood of membership into the three discrimination/attribution groups. These analyses were done on $N = 13,582$, excluding those who did not have complete data for SPA ($N = 41$). We repeated the same analyses for participants of the 2010 wave of HRS who had longitudinal data collected in 2014 for the same measures ($N = 5,482$). Data were analyzed using SAS 9.4.

Results

Overall, 61% of the sample reported experiencing discrimination in at least one context. Supplementary Figures 1A, B provide descriptive information for the percentage in each age group who reported discrimination for each of the six everyday contexts included in the measure and for each of

the eleven attributed reasons for experiences of discrimination. The results of a multivariate logistic regression with perceived discrimination as the outcome variable indicated that age group was a unique predictor in an unadjusted model (Model 1) and after controlling for all covariates (Model 2). All age group comparisons were significant (Supplementary Table 1). In the fully adjusted model, the participants in their 50s were, on average, twice as likely to report experiencing discrimination compared to the two oldest groups. All covariates in the model except wave were significant predictors.

Age Group Differences in Attributions of Discrimination

Overall, 50% of the whole sample checked at least one attribution for their perceived discrimination and, on average, respondents checked two attributions ($M = 2.10$, $SD = 1.51$, range = 1–11). Figure 1 illustrates the relative percent in each age group who: (a) reported discrimination and attributed it to age only, (b) reported discrimination and attributed it to age in combination with other reasons, (c) reported discrimination and attributed it to other reasons but not age, (d) reported discrimination but did not mark any reason, (e) reported no discrimination.

To examine differences between those who reported age as an attribution for perceived discrimination (response types 1 and 2) and all other participants (response types 3, 4, and 5), we conducted a multivariate logistic regression with age attribution (1 = Yes, 0 = No) as the outcome and age group as a predictor without and with covariates. As presented in Table 2, consistent with our hypotheses, participants from older age groups were significantly more likely than participants in their 50s to attribute their perceived discrimination to their age. The significance of age

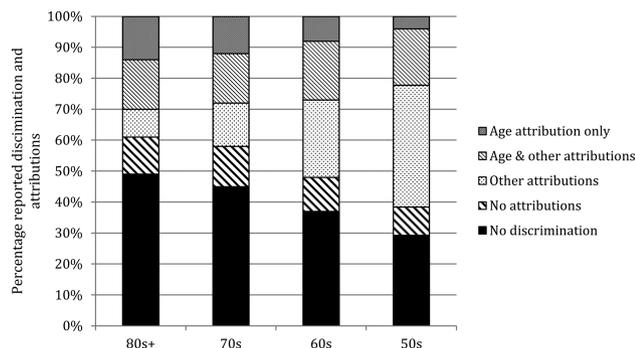


Figure 1. Percentage of respondents ($N = 13,623$) by discrimination/attribution groups for each age group. No discrimination = no discrimination reported; No attribution = discrimination reported but no attribution was checked; Other attributions = discrimination reported and attributions other than age were checked; Age & other attributions = discrimination reported and age with other types of attributions were checked; Age attribution only = discrimination reported and only age attribution was checked. Age Groups: 50s = Early Midlife, 60s = Late Midlife, 70s = Young Old, 80s+ = Oldest Old.

group in predicting age attribution was found in an unadjusted model (Model 1) and in the fully adjusted model (Model 2). In addition, results from the fully adjusted model showed that participants were more likely to attribute perceived discrimination to their age if they had fewer years of education, were not married, reported four or more functional limitations, reported four or more depressive symptoms, and had higher scores on neuroticism. The effects of wave, race, employment status, and wealth were not significant.

To clarify the relationship between age group and attribution of perceived discrimination to reasons other than age, we conducted another multivariate logistic regression with other attributions (1 = Yes, 0 = No) as the outcome and age group as a predictor without and with all covariates. Age group was a significant predictor: participants in their 50s were approximately three and five times more likely to mark other attributions than age for their perceived discrimination than participants who were in their 70s or older than 80 years, respectively (Supplementary Table 2). Moreover, participants who were more educated, nonwhite, men, employed, poorer, reported four or more functional limitations, and had higher scores on neuroticism, were more likely to report other attributions for their perceived discrimination. The effects of wave, marital status, and number of depressive symptoms were not significant.

SPA and Perceived Age Discrimination

To explore relations between SPA and the way people perceived discrimination and reasons for their experience, we examined whether positive SPA differed between individuals who reported experiencing age discrimination versus those who did not and whether age group moderated this relation (Figure 2). For this analysis, we created three discrimination/attribution groups: (a) Age discrimination (discrimination reported and age only or age with other attributions were checked); (b) No age discrimination (discrimination reported and other attributions but not age or no attributions were checked); (c) No discrimination. In a general linear model, with positive SPA as the outcome and Discrimination/Attribution (3 groups) and Age Group (4 groups) as predictors, the main effects of Discrimination/Attribution and Age Group were significant, $F(2, 13570) = 387.29$ and $F(3, 13570) = 128.00$, as well as an interaction between them, $F(6, 13570) = 7.46$, $ps < .001$. To further evaluate the interaction effect, we performed separate follow-up analyses for each age group. There was a significant effect of Discrimination/Attribution type in all age groups: participants who reported discrimination and attributed it to their age were less positive about their aging (i.e., lower SPA scores) than those who either reported discrimination but did not attribute it to their age or did not report experiencing discrimination. Participants who did not report experiencing discrimination had the highest

Table 2. Logistic Regression Predicting Reporting Age Attribution for Discrimination

| | B | SE | Wald | Odds ratio | 95% CI |
|-------------------------------------|----------|------|---------|------------|-------------|
| Model 1 (unadjusted) | | | | | |
| Intercept | -1.22*** | 0.04 | 1033.81 | 0.30 | |
| Age Group (50s) | | | | | |
| 80s+ | 0.36*** | 0.06 | 32.75 | 1.43 | (1.26–1.62) |
| 70s | 0.28*** | 0.06 | 29.68 | 1.33 | (1.20–1.47) |
| 60s | 0.23*** | 0.05 | 19.02 | 1.26 | (1.14–1.40) |
| Model 2 (fully adjusted) | | | | | |
| Intercept | -2.27*** | 0.13 | 298.83 | 0.10 | |
| Age Group (50s) | | | | | |
| 80s+ | 0.44*** | 0.07 | 34.00 | 1.55 | (1.34–1.80) |
| 70s | 0.40*** | 0.06 | 42.72 | 1.49 | (1.32–1.68) |
| 60s | 0.31*** | 0.06 | 30.89 | 1.36 | (1.22–1.52) |
| Covariates | | | | | |
| Wave (2012) | | | | | |
| 2010 | -0.03 | 0.04 | 0.42 | 0.98 | (0.90–1.05) |
| Education (> HS) | 0.04*** | 0.01 | 28.74 | 1.04 | (1.03–1.06) |
| White | | | | | |
| Non-White | -0.03 | 0.05 | 0.37 | 0.97 | (0.87–1.07) |
| Women | | | | | |
| Men | 0.18*** | 0.04 | 18.07 | 1.19 | (1.10–1.29) |
| Working | | | | | |
| Not working | -0.05 | 0.05 | 0.90 | 0.96 | (0.87–1.05) |
| Married | | | | | |
| Not-Married | 0.09* | 0.04 | 3.93 | 1.09 | (1.01–1.19) |
| Functional limitations (≥ 4) | | | | | |
| < 4 | -0.26*** | 0.04 | 34.27 | 0.77 | (0.71–0.84) |
| Depressive symptoms (≥ 4) | | | | | |
| < 4 | -0.17** | 0.06 | 9.09 | 0.85 | (0.76–0.94) |
| Neuroticism | 0.52*** | 0.03 | 224.68 | 1.68 | (1.57–1.80) |
| Wealth (Highest Q5) | | | | | |
| Wealth Q1 | 0.16* | 0.07 | 4.71 | 1.17 | (1.04–1.37) |
| Wealth Q2 | 0.11 | 0.07 | 2.76 | 1.12 | (0.99–1.28) |
| Wealth Q3 | 0.14* | 0.06 | 4.95 | 1.15 | (1.03–1.32) |
| Wealth Q4 | 0.08 | 0.06 | 1.64 | 1.09 | (0.96–1.23) |

Note: $N = 13,623$. Age Groups: 50s = Early Midlife, 60s = Late Midlife, 70s = Young Old, 80s+ = Oldest Old.

* $p < .05$; ** $p < .01$; *** $p < .001$.

SPA. The magnitude of the effect was greater in younger age groups (Figure 2). Specifically for the 80s+ group, $F(2, 1939) = 45.56$, $\eta_p^2 = 0.045$; 70s group, $F(2, 3919) = 87.62$, $\eta_p^2 = 0.043$; 60s, $F(2, 3772) = 132.28$, $\eta_p^2 = 0.066$, and 50s, $F(2, 3942) = 164.49$, $\eta_p^2 = 0.077$. The pattern of results did not change after we included all covariates.

Using multinomial logistic regression with the age attribution for discrimination as the reference group, we then examined if positive SPA predicted the likelihood of membership into the three different discrimination/attribution groups. Age group was also included as a predictor. We found that participants with more positive SPA were more likely to belong to the no age discrimination group (Relative Risk Ratio = 1.36, 95% CI = 1.30–1.42, $p < .001$) and to the no discrimination group (RRR = 1.86, 95% CI = 1.78–1.95, $p < .001$) compared to the age discrimination group. Thus, participants with more positive SPA were

less likely to be in the group who attributed their experienced discrimination to their age. The association between SPA and discrimination/attribution groups remained significant in the fully adjusted model.

The results of the longitudinal analysis supported cross-sectional findings of a bidirectional relation between SPA and perceived discrimination. Specifically, after controlling for 2010 SPA and adjusting for all 2010 covariates, participants had more positive SPA in 2014 if they were in the no discrimination group in 2010, $F(2, 5438) = 7.03$, $p < .001$, $\eta_p^2 = 0.003$, compared to those who were in either of the two discrimination groups (age discrimination and discrimination for reasons other than age), which did not differ from one another. Thus, SPA was predicted by perceived discrimination measured 4 years ago. At the same time, whether participants reported age discrimination in 2014 was predicted by their SPA in 2010. After controlling for 2010

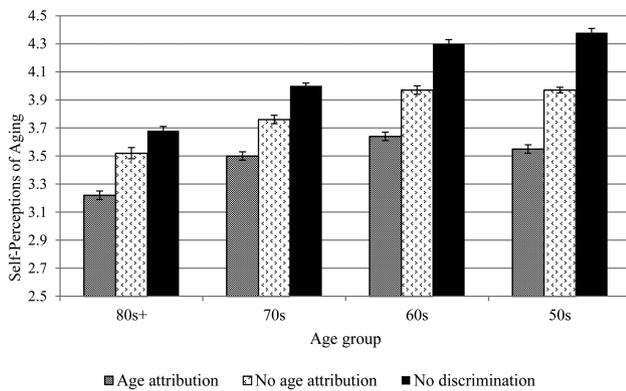


Figure 2. Mean self-perceptions of aging by discrimination/attribution groups for each age group ($N = 13,623$). Age attribution = discrimination reported and age only or age with other types of attributions were checked; No age attribution = discrimination reported and other types of attributions but not age or no attributions were checked; No discrimination = no discrimination reported. Age Groups: 50s = Early Midlife, 60s = Late Midlife, 70s = Young Old, 80s+ = Oldest Old. Note. Error bars: $\pm 1 SE$.

discrimination/attribution group membership and adjusting for all 2010 covariates, participants with more positive 2010 SPA were more likely to belong to the no age discrimination group ($RRR = 1.17$, 95% CI = 1.05–1.32, $p < .001$) and to the no discrimination group ($RRR = 1.25$, 95% CI = 1.12–1.39, $p < .001$) compared to the age discrimination group.

Discussion

This study describes variations in perceived age discrimination and highlights the relationship between perceived age discrimination and SPA among members of four age groups over age 50. We found that participants in their 50s (early midlife) were less likely than those in their 60s, 70s, and 80s to attribute perceived discrimination to their age. We also found that, within age groups, individuals who perceived discrimination and attributed it to their age were the least positive about their own aging. Overall, and consistent with studies using different HRS subsamples (e.g., Ayalon, 2016; Han & Richardson, 2015; Luo, Xu, Granberg & Wentworth, 2012; Rippon, Zaninotto, & Steptoe, 2015), we found that 61% reported experiencing some type of public discriminatory experience and that the majority of the participants who nominated a reason for their experiences indicated that the discrimination was due to age. Previous research on age discrimination among older adults has grouped together people over the age of 50, and has included relatively racially and ethnically homogenous samples. We add to the literature in this area by distinguishing unique effects associated with age group membership, and examining reciprocal associations with SPA over time, among a relatively diverse national sample of Americans over the age of 50.

Members of the early midlife age group were, on average, twice as likely to report experiencing discrimination, in general, compared to the oldest two age groups. However,

consistent with our first hypothesis, despite higher rates of reported discrimination, compared to all other age groups, those in early midlife were the least likely to attribute their experiences to age. Instead, as illustrated in Figure 1, a greater proportion of this group attributed their experiences to other reasons such as weight, race, gender, and financial status. This finding is expected given that HRS participants who are currently in their 50s are a more racially and socio-economically diverse subgroup compared to the older age groups in HRS, and may have elevated risks for a wider variety of discriminatory experiences. Furthermore, the significant age group gradient in age discrimination endorsement shown in Figure 1 is consistent with the increasing salience of age that accompanies transitions into retirement and social role changes in later life. Although negative age stereotypes can be internalized by individuals of all ages, age stigmatization may become particularly self-relevant as individuals transition to later life phases (Levy, 2009).

Consistent with our second hypothesis, we found that individuals within each age group who did not report age discrimination were more positive about their aging than those who did (Figure 2). Because we tested the associations in both directions, and over 4 years, these findings can be interpreted in several ways. It may be that as individuals experience negative age stigmatization such unfair treatment becomes internalized and takes its toll on how they feel about their own aging. Alternatively, it may be that individuals who feel more positively about their own aging are less likely to believe that any unfair treatment they encounter is specifically due to their age. In other words, feeling positively about one's own aging may serve as a protective factor against the perception of age-related discrimination. Given the substantial research surrounding the importance of SPA to individuals' well-being, health, and longevity (e.g., Kotter-Gröhn et al., 2009; Levy, Slade, Kunkel, & Kasl, 2002; Sargent-Cox et al., 2014; Westerhoff et al., 2014), these findings highlight the need for continued investigation into the potential bidirectional associations between perceived age discrimination and SPA. For example, although perceived age discrimination was associated with less positive SPA within each of the age groups, the magnitude of this association was greatest among the early midlife group. This finding may suggest that, in midlife, when people begin to adjust to new social transitions and aspects of physiological change (e.g., Lachman et al., 2015), perceiving age discrimination may take a particularly striking toll on how they feel about their own aging. It may also suggest that holding positive self-perceptions of one's own aging may be especially protective in midlife. Future longitudinal studies will be needed to investigate whether the magnitude of the association between perceived age discrimination and SPA among this group changes as they reach their 70s and 80s.

There are a few limitations to note in the present study. First, because our examination of attributions of discrimination was cross-sectional, we cannot disentangle the extent to which differential attributions are a result of age per se, or link to the contemporary social, demographic,

life history, and attitudinal profiles that characterize each of the age groups in the present study. As stated above, future longitudinal studies will be needed to investigate how perceptions of age discrimination, and associated SPA, change as people become older. Additionally, our analyses are based on self-reported experiences on a measure that was primarily developed for epidemiological and public health research about the effects of race and gender discrimination (Williams et al., 1997). Although age is included as one potential reason for perceived discrimination, the six contexts of interpersonal interactions may not be as directly relevant for detecting age discrimination experiences. Future work may benefit from the inclusion of additional descriptions of everyday public interactions relevant to older adults who are retired from work or limited in physical mobility. Additionally, follow-up studies with small samples should also examine the correspondence between reported and actual experiences of discrimination.

Despite these limitations, the present study contributes to our knowledge about the complex interplay between perceptions of discrimination and feelings about one's own aging among different age groups over 50. Given U.S. Census projections about the impact of the large Baby Boom cohort (who in the present study are aged 50 to 69) and expected future rates of longevity on the aging of society, the need to understand differences among older adults in experiences of discrimination, especially age discrimination, is a high research priority. Because sustained experiences of discrimination are already known to have detrimental effects on health and well-being (Levy, 2009), understanding differential patterns of experiences of discrimination across different age groups, and associations with self-related perceptions within age groups, is an important step toward determining how best to address discrimination at the individual, intergenerational, and societal levels.

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Supplementary Material

Supplementary data are available at *The Gerontologist* online.

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