

Original Article

Trajectories of Perceived Workplace Age Discrimination and Long-Term Associations With Mental, Self-Rated, and Occupational Health

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Received: August 26, 2016; Editorial Decision Date: June 13, 2017

Decision Editor: Deborah Carr, PhD

Abstract

Objective: This study addresses older employees' trajectories of perceived workplace age discrimination, and the long-term associations among perceived age discrimination and older workers' mental and self-rated health, job satisfaction, and likelihood of working past retirement age. We evaluate the strength and vulnerability integration (SAVI) model.

Method: Three waves of data from employed participants were drawn from the Health and Retirement Study ($N = 3,957$). Latent growth modeling was used to assess relationships between the slopes and the intercepts of the variables, thereby assessing longitudinal and cross-sectional associations.

Results: Perceived workplace age discrimination tends to increase with age, although notable variance exists. The initial status of perceived age discrimination relates to the baseline statuses of depression, self-rated health, job satisfaction, and likelihood of working past retirement age in the expected directions. Over time, perceived age discrimination predicts lower job satisfaction and self-rated health, as well as elevated depressive symptoms, but not likelihood of working past retirement age.

Discussion: This study provides empirical support for the SAVI model and uncovers the “wear and tear” effects of perceived workplace age discrimination on older workers' mental and overall health. We deliberate on social policies that may reduce age discrimination, thereby promoting older employees' health and ability to work longer.

Keywords: Age discrimination, Job satisfaction, Latent growth modeling, Mental health, Older workers, Self-rated health

The trend of working to an older age is a global phenomenon (OECD.Stat, 2016) attributable to many factors including greater longevity, rising retirement eligibility ages, improved health, and increasing financial necessity (Munnell, 2015). Despite their growing representation, many older adults do not experience receptive climates in the workplace. Negative stereotypes of older workers are abundant (Posthuma & Campion, 2009) and include assumptions that they lack creativity, perform more poorly, resist change, provide lower returns on investments, and are

less able or willing to learn and adapt (Chiu, Chan, Snape, & Redman, 2001; Posthuma & Campion, 2009). Age stereotyping causes supervisors and coworkers to engage in numerous discriminatory behaviors including providing biased assessments of older workers' performance and economic worth, as well as lower recommendations for their selection, training, promotion, job transition, and retention (Chiu et al., 2001; Finkelstein & Burke, 1998; Fritzsche & Marcus, 2013; Krings, Sczesny, & Kluge, 2011; Rupp, Vodanovich, & Crede, 2006). While research has

documented age stereotypes and discrimination by supervisors and coworkers, comparatively less is known about older employees' perceptions of age discrimination and their effect on health and retirement intentions.

This study examines older adults' perceptions of workplace age discrimination over time by applying latent growth modeling (LGM) to a longitudinal study of older adults in the United States. These analyses explore whether age discrimination trajectories increase over time, as theory proposes, and respond to [Palmore's \(2015\)](#) call to better uncover trends in ageism. Furthermore, this study provides an empirical test of the strength and vulnerability integration model (SAVI; [Charles, 2010](#)), examining whether perceptions of age discrimination predict long-term changes in older adults' mental, physical, and occupational health, and their likelihood of working past retirement age, taking into account older adults' typically effective coping strategies ([Diehl, Coyle, & Labouvie-Vief, 1996](#)). The paper's sampling and statistical methods provide a robust test of the associations between older workers' discriminatory experiences and outcomes over time.

Older Adults' Perceptions and Outcomes of Workplace Age Discrimination

The SAVI model ([Charles, 2010](#)) proposes that older adults' continual exposure to age discrimination results in wear and tear effects over time. According to this model, older adults exhibit—and ultimately benefit from—greater emotion regulation skills, yet when a stressor becomes chronic, it overwhelms older adults' regulatory skills and triggers harmful physiological responses ([Charles, 2010](#)). That is, older adults' strengths in responding to negative events are proposed to fade as the events accumulate. This idea coincides with proposals that discrimination is often a chronic stressor that can result in numerous strains over time ([Allen, 2016](#); [Charles, Piazza, Mogle, Sliwinski, & Almeida, 2013](#)). When older adults cannot avoid negative interactions—such as when faced with chronic workplace stressors—they may struggle as they attempt to draw on their coping strategies and thus experience diminished health ([Charles, 2010](#)). Recent experimental work demonstrates that older adults respond more negatively than younger adults to social rejection, which triggers a decline in the complexity of their thinking ([Cheng & Grünh, 2015](#)). These results demonstrate that unavoidable negativity undermines older adults' coping and cognitive abilities, which may then damage other facets of their health. In our hypotheses, we draw on this theory to propose that perceptions of age discrimination undermine older employees' likelihood of working past retirement age and numerous facets of their health over time. In doing so, we not only provide an empirical test of the SAVI model but address whether discriminatory treatment harms older adults' well-being despite their beneficial emotion regulation and coping strategies.

Mental Health

Mental health conditions and, in particular, depression often develop from exposure to stressors, including interpersonal mistreatment ([McGonagle & Kessler, 1990](#)). Perceived societal age discrimination correlates with precursors of depression, such as lower self-esteem and psychological well-being ([Garstka, Schmitt, Branscombe, & Hummert, 2004](#)). Generic workplace mistreatment relates to poorer mental health outcomes, such as anxiety and negative mood ([Lim, Cortina, & Magley, 2008](#)). These associations between mistreatment and mental health lead to our first hypothesis about the relationship between perceived workplace age discrimination and older employees' depression:

Hypothesis 1: Increases in perceived age discrimination at work will relate to increases in depression over time.

Overall Health

Older adults are particularly vulnerable to the health effects of perceived discrimination, partly due to age-related alterations in immunocompetence ([Kregel & Zhang, 2007](#); [Makinodan et al., 1991](#); [Moreno-Villanueva & Bürkle, 2015](#)). Discrimination, a form of social rejection, may increase cortisol, a stress-related hormone, thereby affecting physiological, physical, and psychological health functioning ([McEwen, 1998](#)). Some have also speculated that discrimination may result in negative health outcomes and functioning ([Allen, 2016](#); [Pascoe & Smart Richman, 2009](#); [Vauclair et al., 2015](#)). We test these assumptions using perceived workplace age discrimination:

Hypothesis 2: Increases in perceived age discrimination at work will relate to decreases in overall health over time.

Job Satisfaction

In cross-sectional research, employees of all ages who report age discrimination tend to experience lower job satisfaction ([Redman & Snape, 2006](#); [Taylor, McLouglin, Meyer, & Brooke, 2012](#)). Emerging research has documented correlations between workplace age discrimination and job withdrawal, job dissatisfaction, lower organizational commitment, and lack of perceived job power ([Redman & Snape, 2006](#); [Taylor et al., 2012](#)). General organizational climates of age discrimination relate to declines in affective commitment ([Kunze, Boehm, & Bruch, 2011](#)). Drawing on these cross-sectional associations between workplace mistreatment and job attitudes, the following hypothesis is offered:

Hypothesis 3: Increases in perceived age discrimination at work will relate to decreases in job satisfaction over time.

Likelihood of Working Past Retirement Age

Employees who experience discrimination often contemplate ways to exit or avoid their organizations (Lim et al., 2008); unlike younger workers, older employees can accomplish this goal through retirement. While a number of predictors of retirement planning have been uncovered, such as financial literacy (Lusardi & Mithchell, 2011) and pensions (Chan & Stevens, 2003), age discrimination may be an important negative interpersonal factor that further explains this major life decision. In case studies of Australian and British workers, older employees were more likely to leave their organizations prior to the official retirement age when they perceived age bias at work (Brooke & Taylor, 2005). Researchers theorize and preliminary research supports the notion that workplace age discrimination relates to older workers' turnover and retirement decisions (Johnson & Neumark, 1997; Redman & Snape, 2006). Given the association between general workplace mistreatment and turnover, we hypothesize that older workers who perceive more age discrimination will make retirement plans that facilitate organizational exit, even prior to formal retirement ages:

Hypothesis 4: Increases in perceived age discrimination at work will relate to decreases in likelihood of working past retirement age over time.

Covariate: Household Assets

Previous research has demonstrated that the dependent variables in the present study correlate with numerous other variables, such as one's assets, education level, and occupation or industry. While a large number of covariates could be included in the current model, we followed recommendations for the inclusion of control variables by Becker et al. (2015) and Bernerth and Aguinis (2016). These scholars recommend very cautious inclusion of covariates, as control variables parse apart the independent variables and can result in "studying a relationship that either does not exist or deviates substantially from actual... realities" (Bernerth & Aguinis, 2016, p. 231). They recommend limiting covariates to only those with strong theoretical rationale. When considering the literature on our dependent variables collectively, household assets repeatedly emerges as a significant predictor (House et al., 1994; Robert & House, 1996), suggesting that its influence may need to be accounted for in the present model. Beyond empirical rationale for selecting assets as a covariate, the SAVI model proposes that the reason stressors undermine older adults over time is because they overwhelm older adults' resources and ability to cope. Older adults who possess greater resources (e.g., regular income, home ownership, savings and retirement accounts, little debt) may experience less steep declines in their well-being following stressors, given their accumulation of resources and likely better access to services (e.g., physical and mental health services). Given this theoretical and empirical basis, we elected to include household assets as a control variable when testing all hypotheses.

Method

Participants and Procedure

Data were drawn from the 2010, 2012, and 2014 waves of the Health and Retirement Study (HRS), an ongoing longitudinal study of Americans aged 51 years and older sponsored by the National Institute on Aging and conducted by the University of Michigan. HRS uses multistage national area probability sampling to produce nationally-representative data. Baseline interviews are conducted in-person, while most of the subsequent biennial interviews are conducted via telephone. Cross-wave attrition in the HRS is low, with reinterview response rates generally ranging from 94% to 96% per wave (Health and Retirement Study, 2011). We selected respondents who were: (a) age 50 years or older at T1; (b) employed at least part-time in all waves; and (c) responded to the age discrimination items in at least one wave, resulting in $N = 3,957$. At Time 1 (T1) the average age was 57.7 years ($SD = 6.4$ years). Women comprised 56% of the sample. Racial composition was 67.1% ($n = 2,655$) White, 21.9% ($n = 868$) African American, and 10.5% ($n = 415$) another race; 15% of respondents ($n = 592$) were of Latino decent.

Measurement

Perceived workplace age discrimination

Two items captured perceived workplace age discrimination ("In decisions about promotion, my employer gives younger people preference over older people," "My coworkers make older workers feel that they ought to retire before age 65"). Respondents answered each item from 1 (*strongly agree*) to 4 (*strongly disagree*). Items were reverse-coded so higher scores represented greater perceived discrimination. Because the items assess discrimination from supervisors and coworkers, we examined their associations to determine if the items should be modeled separately or combined into a single, comprehensive indicator of age discrimination. The items correlated strongly across waves (r 's by ascending waves = .48, .46, .49, .55; Cohen, 1988). We also conducted a confirmatory factor analysis, allowing the discrimination facets to correlate; their association was very strong ($.93, t = 26.7, p < .001$). This information demonstrated that the items are highly related and should be combined, so we averaged items within each wave to create single indicators of perceived age discrimination.

Depression

Depression was assessed using the Center for Epidemiological Studies Depression scale. Participants reported whether (*yes/no*) they experienced eight items "much of the time" during the past week. The two positive indicators ("felt happy," "enjoyed life") were reverse-coded. Items were summed, creating scores from 0 (no depressive symptoms) to 8 (all depressive symptoms).

Overall health

Self-reported health has been shown to be a valid measure of overall health and a reliable predictor of functional ability, comorbidity and mortality net of baseline functional ability, health, and sociodemographic status (DeSalvo, Bloser, Reynolds, He, & Muntner, 2006; Idler & Kasl, 1995; Idler & Benyamini, 1997). It is also a reliable and strong predictor of work preferences, intensity and duration of work, and labor force participation (Gonzales, 2013; Dwyer & Mitchell, 1999). Participants answered the question, "Would you say your health is excellent, very good, good, fair, or poor?" (higher scores reflected better health).

Job satisfaction

Respondents rated the item "I really enjoy going to work" on a 4-point scale, from 1 (*strongly agree*) to 4 (*strongly disagree*), which was reverse-coded so higher scores indicated greater satisfaction. A multi-item job satisfaction measure is not available in the core HRS database. However, single- and multi-item measures of job satisfaction contain high convergent validity, especially in studies of overarching job satisfaction foci, such as in the present study (Ferraro & Kelley-Moore, 2001; Wanous, Reichers, & Hudy, 1997).

Likelihood of working past retirement age

Participants rated their likelihood (0% to 100% chance) of working past retirement age, which the HRS defines as 62 years.

Household assets (covariate)

We controlled for household assets in the multivariate model to minimize its effect on health and retirement plans (House et al., 1994). Assets consisted of the sum of all forms of wealth (real estate, vehicles, businesses, retirement savings, investments, cash, and any other savings) less all debt (mortgage, home loans, and any other debt). The logarithm of household assets was calculated to improve normality and reduce the extensive range of values.

We tested the multivariate model controlling for household income, and the results did not significantly change (e.g., fit indices, significance of effect sizes). We elected to include household assets as the covariate in order to capture a broader range of financial issues that may affect employees' outcomes, particularly likelihood of working past retirement age.

We also tested a model in which we controlled for education, which did not significantly affect the model's fit indices or effect sizes.

Latent Growth Modeling

Analyses were conducted using MPlus. The MLR estimator was used so that missing values for all variables were imputed using maximum likelihood estimation with robust

standard errors. First, univariate models were run independently for each variable: age discrimination, depression, self-reported health, job satisfaction, likelihood of working past retirement age, and household assets. Within each univariate model, two latent variables were created: one for the variable's initial status (i.e., intercept; including its mean and variance) and one for the variable's change over time (i.e., slope; including its mean and variance). Thus, for each variable, univariate models provide information about respondents' starting points, variance around the starting points, change over time, and variance around the change factors. For the initial status factor, all loadings were set equal to one (Bollen & Curran, 2006). For the change factor, loadings were set equal to zero, one, two, or three to represent equal time distances between waves. The initial status and change factors were allowed to correlate within each model.

Based on the univariate models, all variables contained significant means for and/or variance around their change factors, indicating change over time. As such, we proceeded to the multivariate model, testing associations between exogenous and endogenous variables. Identical to the univariate models, factor loadings for the initial status factors were set equal to one and factor loadings for the change factors were set equal to one-increment increases to reflect change. To test static associations, the initial statuses of all endogenous variables were regressed on the initial statuses of all exogenous variables. We also included pathways between the initial statuses of exogenous variables and the change factors of endogenous variables to account for the influence of age discrimination starting values on changes in outcomes. Importantly, the change factors of the endogenous variables were regressed on the change factors of the exogenous variables to examine stressor-strain relationships over time. The initial status and change factors correlated within and between all exogenous variables, as did the residuals of the initial status and change factors within and between all endogenous variables.

Results

Eighty-nine percent to ninety-four percent of the perceived age discrimination data was present across waves. Descriptive statistics and variable intercorrelations appear in the Supplementary Table 1.

Univariate Models

In the univariate model for perceived age discrimination, older workers significantly varied in their mean levels (i.e., initial statuses) of perceived age discrimination (Table 1). Perceived age discrimination significantly varied its mean change (i.e., slope), increasing over time, and the variance around the slope approached significance. The initial statuses of all endogenous variables, as well as the assets

covariate, were significant and contained significant variance, meaning that between-person variance existed in older adults' starting values of the outcome variables. The mean changes of all endogenous variables (and the assets covariate), except retirement likelihood, were also significant. On average, participants decreased in their depressive symptoms, self-reported health, and job satisfaction over time. However, all of the endogenous change factors, except self-reported health, contained significant variance, indicating that respondents significantly varied in their trajectories of well-being (e.g., not all participants became less satisfied).

Multivariate Model

The model's exogenous variables were perceived age discrimination (initial status and change) and the covariate household assets (initial status and change). The endogenous variables were the initial status and change factors for depressive symptoms, self-rated health, job satisfaction, and retirement likelihood. All variables were included in one multivariate model (Table 2). The multivariate model demonstrated good fit: $\chi^2(89, N = 3,957) = 261.91, p < .001$; root mean square error of approximation = .022; comparative fit index = .99; standardized root mean square residual = .016. As perceived age discrimination increased over time, depression increased (i.e., the change factors were positively related), supporting H1. The initial status of perceived age discrimination also positively related to the initial status of depressive symptoms. Changes in perceived age discrimination negatively related to changes in self-rated health, thereby supporting H2. The initial status of age discrimination also negatively related to the initial status of self-rated health. H3 was supported, in that as age discrimination increased over time, job satisfaction significantly decreased. The initial status of perceived age discrimination also negatively related to the initial status of job satisfaction. Changes in perceived age discrimination approached but did not meet significance standards in predicting retirement likelihood ($p = .059$), thus not supporting H4. The initial status of age discrimination was

negatively related to the initial status of likelihood of working past retirement age.

When the 2008 wave was included in analyses, the age discrimination change variable no longer significantly related to three of the dependent change variables (likelihood of working past retirement age, depression, and self-rated health). This is likely due to the effects of the Great Recession, which occurred during 2008 and the first half of 2009 (National Bureau of Economic Development, 2010). Widespread economic instability and financial strain likely explained more variance in older workers' outcomes (e.g., mental health, job attitudes) than other stressors during this time (Johnson, 2012; Wilkinson, 2016), making it a focal predictor that outweighed the effects of others.

Discussion

Despite ample evidence of negative stereotypes toward older workers, the literature has largely overlooked older employees' perspectives on workplace age discrimination and its impact on outcomes. We advance the aging and workplace discrimination literatures by investigating older workers' perceptions of age discrimination and demonstrating that these experiences significantly undermine multiple facets of their health over time.

This study applied LGM to a large sample of older workers to uncover changes in perceived workplace age discrimination within and between older employees over time. On average, older workers experienced gradual increases in age discrimination, demonstrating that perceptions of age discrimination tend to worsen as workers age. These results suggest that coworkers and supervisors may increasingly apply negative age stereotypes to workers as they age (Finkelstein, Ryan, & King, 2013), ultimately resulting in more discriminatory behavior toward them.

Importantly, this study highlights the negative consequences of perceived age discrimination. Increases in perceived age discrimination were related to increases in older employees' depressive symptoms and decreases in their job satisfaction and overall self-rated health. These results provide empirical support for the "wear and tear" effects

Table 1. Univariate Latent Growth Modeling: Growth Parameter Estimates

Parameter	Initial status (IS)		Change (CH)		Covariance IS-CH (σ_{IS-CH})
	$M (\mu_{IS})$	Variance (σ^2_{IS})	$M (\mu_{CH})$	Variance (σ^2_{CH})	
Age discrimination	2.02 (0.01)***	0.18 (0.01)***	0.01 (0.006)*	0.01 (0.007) [†]	-0.008 (0.008)
Depression	1.13 (0.03)***	1.66 (0.13)***	-0.04 (0.01)**	0.13 (0.06)*	-0.17 (0.07)*
Job satisfaction	3.15 (0.01)***	0.20 (0.01)***	-.02 (.01)**	0.03 (0.01)***	-.02 (.01)**
WPR	57.03 (0.61)***	689.2 (39.93)***	0.43 (0.34)	49.29 (21.37)*	-33.8 (24.45)
Self-rated health	3.53 (0.02)***	0.59 (0.02)***	-0.05 (0.01)***	0.02 (0.01)	-0.02 (0.01)
Household assets	9.54 (0.12)***	40.05 (2.41)***	0.33 (.06)***	5.61 (0.96)***	-7.6 (1.24)***

Note: Standard errors are in parentheses. Unstandardized coefficients are often reported for parameter estimates, because standardized values equate the means and variances (Bentein, Vandenberghe, Vandenberg, & Stinglhamber, 2005). WPR = likelihood of working past retirement age. $N = 3,957$. [†] $p < .08$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2. Unstandardized Structural Effects of Growth Parameters on Endogenous Variables

Exogenous variables	AD – IS	AD – CH	Assets – IS	Assets – CH	R ²
D – IS	0.678 (0.085)***		–0.052 (0.007)***		0.133 (0.02)***
D – CH	–0.004 (0.048)	0.948 (0.297)**	0.001 (0.004)	–0.027 (0.013)*	0.197 (0.127)
JS – IS	–0.286 (0.037)***		–0.003 (0.003)		0.101 (0.029)***
JS – CH	–0.046 (0.021)*	–0.231 (0.09)*	0.002 (0.002)	0.006 (0.005)	0.094 (0.079)
WPR – IS	–11.243 (1.68)***		0.005 (0.11)		0.036 (0.011)**
WPR – CH	–1.199 (1.001)	–10.89 (5.766)†	0.151 (0.069)*	0.553 (0.255)*	0.063 (0.051)
SRH – IS	–0.464 (0.044)***		0.031 (0.004)***		0.151 (0.017)***
SRH – CH	0.042 (0.021)*	–0.232 (0.115)*	0.000 (0.001)	0.009 (0.005)	0.26 (0.347)

Note: Standard errors are in parentheses. AD = Age discrimination; CH = Change; D = Depression; IS = Initial status; JS = Job satisfaction; WPR = Likelihood of working past retirement age; SRH = Self-rated health. *N* = 3,957. †*p* < .06. **p* < .05. ***p* < .01. ****p* < .001.

proposed by the SAVI model (Charles, 2010): although older adults are adept at drawing on constructive emotion regulation and coping strategies, prolonged discriminatory stressors appear to overwhelm their ability to do so, ultimately undermining numerous facets of their health. This study demonstrates that perceptions of workplace age discrimination often constitute a chronic stressor, with 29%–32% of older workers experiencing increases over time. The mean rate of perceived age discrimination significantly differed from zero at Time 1, meaning that even the third of older workers whose discriminatory experiences did not notably change likely experienced ongoing—albeit, stable—rates of age discrimination for years. The findings reveal that perceived workplace age discrimination eventually takes a toll on older employees' health.

Perceived workplace age discrimination related to retirement likelihood cross-sectionally, but changes in discrimination did not reach significance in predicting changes in likelihood of working past retirement age over time. One possible explanation, based on correlations between the residuals of the endogenous variables, is that workplace age discrimination proximally relates to job satisfaction, which, in turn, influences retirement likelihood. That is, perceptions of age discrimination may indirectly affect likelihood of working past retirement age via job attitudes – an idea for future investigation.

Limitations and Future Directions

Findings from this study should be understood in light of its limitations. First, a dual-item measure of perceived workplace age discrimination may not fully tap into the complex tapestry of this construct. Validated and reliable measures of age discrimination, such as the workplace age discrimination scale (WADS; Marchiondo, Gonzales, Ran, 2016), should be used in national, longitudinal studies to expand knowledge of this phenomenon and its effects. Such measures could be applied to examine the long-term outcomes of perceived age discrimination among young workers as well. Additionally, emerging research has demonstrated that some younger workers are targeted with negative age stereotypes and discrimination at comparable rates as older

workers (Anonymous, 2015; Finkelstein et al., 2013), warranting greater attention to the association between workplace discrimination and health across the life span.

Several of the dependent variables were measured using single items, which may raise questions about validity and reliability. Wanous and colleagues (1997) note that “The use of single-item measures should not be considered fatal flaws in the review process,” but rather, their “appropriateness...should be evaluated” (pp. 250–251). The HRS contains single item measures in order to minimize respondent burden, which ultimately improves response rates (over 90% across waves), a notable strength of this data set. Certain single items, such as the HRS job satisfaction measure, are nearly as valid and reliable as multiple item measures (Ferraro & Kelley-Moore, 2001; Wanous et al., 1997). Nonetheless, multi-item measures should be included in future studies of age discrimination.

Future research could adopt experimental approaches to better disentangle causality and address potential endogeneity concerns. A number of workplace mistreatment publications have begun incorporating experimental designs (e.g., Porath & Erez, 2009), making this a ripe area for future age discrimination research. Experience sampling methods (e.g., daily diary studies) should also be adopted in order to provide further longitudinal tests of the SAVI model.

Analyses were limited to participants working at least part-time in each wave, potentially creating selection bias. This selection criterion was necessary in order to assess perceived age discrimination and two of the outcome variables (job satisfaction, likelihood of working past retirement age), which were only administered to employed HRS participants. However, an area of future research would be to perform survival analyses to determine the relationship between perceived age discrimination and workforce participation, as well as analyses to uncover how previous age discrimination at work relates to well-being outcomes after retirement. Because the current study was limited to individuals who were healthy enough to remain working, our results might provide a conservative estimate of the impact of discrimination on health.

Workplace age discrimination should also be examined cross-nationally, as ageism is a concern for policy-makers

worldwide (National Academy on an Aging Society, 2012). In particular, generalization of our results to Asian cultures remains uncertain. Although age is often associated with wisdom and respect in Eastern countries (Wang, Laidlaw, Power, & Shen, 2010), workplace incivility prevalence appears to be similar in Western and Asian cultures (Lim & Lee, 2011), and the “warm but incompetent” stereotype of older adults also exists across cultures (Cuddy, Norton, M. I., & Fiske, 2005). Cross-national research should explore these issues.

Finally, older employees with additional marginalization factors may be at greater risk of discrimination due to double or triple jeopardy (Berdahl & Moore, 2006). Consistent with theories of intersectionality, preliminary work demonstrates that older adults of color report more age discrimination than older White adults (van den Heuvel & van Santvoort, 2011). However, men appear to report greater age discrimination than women (Taylor et al., 2012). Older age is a unique identity in that everyone ages; understanding how age intersects with innate identities such as gender and race in predicting discriminatory experiences and outcomes is a ripe area for research.

Implications for Policy and Practice

Age stereotypes and discrimination are challenging to address because Western societies have considerable tolerance for ageist attitudes and exclusion (Allen, 2016). Systematically dismantling workplace age discrimination will require multilevel interventions, some of which we describe below.

Legislation

The adverse outcomes found in this study underscore the importance of addressing workplace age discrimination through federal legislation. The U.S. Age Discrimination in Employment Act (ADEA) aims to protect individuals aged 40 years or older from overt forms of discrimination during recruitment, promotion and retention. Unfortunately, after the Supreme Court’s ruling on *Gross v. FBL Financial Services* in 2009, claimants must prove that age was the primary factor in a discrimination claim. The current interpretation of ADEA also treats age differently when compared to protection from race or sex discrimination covered by the Civil Rights Act, in which race or sex can be only one factor, perhaps not the primary factor. Evidence presented in this study offers compelling reasons for legislators to cosponsor the Protecting Older Workers Against Discrimination Act (POWADA) which would reinstate Congress’s original intent for age to be a factor in an age discrimination claim, as opposed to the *primary* factor.

In addition, the Fair Employment Protection Act of 2014 (H.R. 4227) aims to protect individuals from hostile work environments in which covert discriminatory behaviors ensue. Twentieth-century legislation, such as the ADEA, chiefly covers Allport’s (1954) overt forms of prejudice but does not protect workers from the first two stages

of ageism (avoidance and antilocution, or hate talk) that represent more covert forms of discrimination and that the present study may capture (e.g., pressure from coworkers to retire). Legal scholars have advocated for legislation to protect individuals from lower-grade forms of discrimination (Chew, 2011). Findings from this investigation suggest a need for expanded jurisprudence to support older employees in receiving fair treatment, including seemingly lower-grade forms of discrimination the ADEA does not currently cover. Although these manifestations of age discrimination are not overt, our study demonstrates they take a significant toll on older workers and therefore should be addressed legislatively. Legislation, combined with education about and correction of age stereotypes (Brooke & Taylor, 2005), could result in improved health and labor force participation among older workers.

Organizational implications

Organizations that proactively establish practices to protect employees from age discrimination are apt to benefit financially (Kunze et al., 2011). The depressive symptoms and health issues that we demonstrate result from perceived age discrimination could cause employees to be absent from work (e.g., more sick days) and/or exhibit psychological symptoms such as being less focused (Stewart, Ricci, Chee, Hahn, & Morganstein, 2003). Deteriorating health also lowers worker performance and raises employer health insurance premiums (Stewart et al., 2003). In addition, we demonstrate that perceived age discrimination relates to job dissatisfaction, which can affect performance (Judge, Thoresen, Bono, & Patton, 2001) and can spread among workers, undermining organizational climate and productivity (Barsade, 2002).

These adverse outcomes speak to the importance of addressing workplace age discrimination. Interventions based on Allport’s (1954) contact hypothesis may foster changes in attitudes and behavior toward older workers (Iweins, Desmette, Yzerbyt, & Stinglhamber, 2013). Education about and correction of age stereotypes are vital (Brooke & Taylor, 2005). Overall, multilevel interventions call for trans-disciplinary collaboration in order to expand legislation, develop fair workplace practices, and rebut prejudices toward older employees.

Supplementary Material

Supplementary data is available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

Funding

The data set used in this manuscript stems from the Health and Retirement Study (HRS), a public use data set produced and distributed by the University of Michigan, which is supported by the National Institute on Aging (grant number NIA U01AG009740).

Acknowledgments

The authors thank Robert J. Vandenberg for his valuable feedback about our analytic approach, as well as Boris Baltes and Chak Fu Lam for providing friendly reviews of the manuscript. *Author contributions:* L. A. Marchiondo planned the study, conducted the data analysis, and wrote most of the paper. E. Gonzales planned the study, provided feedback on all analyses, wrote sections of the paper, and edited the final manuscript. L. J. Williams contributed to the data analysis and revised the manuscript.

Conflict of Interest

None reported.

References

- Allen, J. O. (2016). Ageism as a risk factor for chronic disease. *The Gerontologist*, *56*, 610–614. doi:10.1093/geront/gnu158
- Allport, G. W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.
- Barsade, S. G. (2002). The ripple effect: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly*, *47*, 644–675. doi:10.2307/3094912
- Becker, T. E., Atinc, G., Breaugh, J. A., Carlson, K. D., Edwards, J. R., & Spector, P. E. (2015). Statistical control in correlational studies: 10 essential recommendations for organizational researchers. *Journal of Organizational Behavior*, *37*, 157–167. doi:10.1002/job.2053
- Bentein, K., Vandenberghe, C., Vandenberg, R., & Stinglhamber, F. (2005). The role of change in the relationship between commitment and turnover: A latent growth modeling approach. *The Journal of Applied Psychology*, *90*, 468–482. doi:10.1037/0021-9010.90.3.468
- Berdahl, J. L., & Moore, C. (2006). Workplace harassment: Double jeopardy for minority women. *The Journal of Applied Psychology*, *91*, 426–436. doi:10.1037/0021-9010.91.2.426
- Bernerth, J. B., & Aguinis, H. (2016). A critical review and best-practice recommendations for control variable usage. *Personnel Psychology*, *69*, 229–283. doi:10.1111/peps.12103
- Bollen, K. A., & Curran, P. J. (2006). *Latent curve models: A structural equation perspective*. Hoboken, NJ: Wiley.
- Brooke, L., & Taylor, P. (2005). Older workers and employment: Managing age relations. *Ageing and Society*, *25*, 415–429. doi:10.1017/S0144686X05003466
- Chan, S., & Stevens, A. H. (2003). *What you don't know can't help you: Pension knowledge and retirement decision-making (Number 10185)*. Cambridge, MA: National Bureau of Economic Research.
- Charles, S. T. (2010). Strength and vulnerability integration: A model of emotional well-being across adulthood. *Psychological Bulletin*, *136*, 1068–1091. doi:10.1037/a0021232
- Charles, S. T., Piazza, J. R., Mogle, J., Sliwinski, M. J., & Almeida, D. M. (2013). The wear and tear of daily stressors on mental health. *Psychological Science*, *24*, 733–741. doi:10.1177/0956797612462222
- Cheng, Y., & Grünh, D. (2015). Age differences in reactions to social rejection: The role of cognitive resources and appraisals. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *70*, 830–839. doi:10.1093/geronb/gbu054
- Chew, P. K. (2011). Seeing subtle racism. *Stanford Journal of Civil Rights and Civil Liberties*, *6*, 183–218. <https://ssrn.com/abstract=1758105>
- Chiu, W. C. K., Chan, A. W., Snape, E., & Redman, T. (2001). Age stereotypes and discriminatory attitudes towards older workers: An East-West comparison. *Human Relations*, *54*, 629–661. doi:10.1177/0018726701545004
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Cuddy, A. J. C., Norton, M. I., & Fiske, S. T. (2005). This old stereotype: The pervasiveness and persistence of the elderly stereotype. *Journal of Social Issues*, *61*, 267–285. doi:10.1111/j.1540-4560.2005.00405.x
- DeSalvo, K. B., Bloser, N., Reynolds, K., He, J., & Muntner, P. (2006). Mortality prediction with a single general self-rated health question. A meta-analysis. *Journal of General Internal Medicine*, *21*, 267–275. doi:10.1111/j.1525-1497.2005.00291.x
- Diehl, M., Coyle, N., & Labouvie-Vief, G. (1996). Age and sex differences in strategies of coping and defense across the life span. *Psychology and Aging*, *11*, 127–139. doi:10.1037/0882-7974.11.1.127
- Dwyer, D. S., & Mitchell, O. S. (1999). Health problems as determinants of retirement: Are self-rated measures endogenous? *Journal of Health Economics*, *18*, 173–193. doi:10.1016/S0167-6296(98)00034-4
- Ferraro, K. F., & Kelley-Moore, J. A. (2001). Self-rated health and mortality among black and white adults: Examining the dynamic evaluation thesis. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *56*, S195–S205. doi:10.1093/geronb/56.4.S195
- Finkelstein, L. M., & Burke, M. J. (1998). Age stereotyping at work: The role of rater and contextual factors on evaluations of job applicants. *The Journal of General Psychology*, *125*, 317–345. doi:10.1080/00221309809595341
- Finkelstein, L. M., Ryan, K. M., King, E. B. (2013). What do the young (old) people think of me? Content and accuracy of age-based metastereotypes. *European Journal of Work and Organizational Psychology*, *22*, 633–657. doi:10.1080/1359432X.2012.673279
- Fritzsche, B., & Marcus, J. (2013). The senior discount: Biases against older career changers. *Journal of Applied Social Psychology*, *43*, 350–362. doi:10.1111/j.1559-1816.2012.01004.x
- Garstka, T. A., Schmitt, M. T., Branscombe, N. R., & Hummert, M. L. (2004). How young and older adults differ in their responses to perceived age discrimination. *Psychology and Aging*, *19*, 326–335. doi:10.1037/0882-7974.19.2.326
- Gonzales, G. E. (2013). An examination on un-retirement: retirees returning to work. *All Theses and Dissertations (ETDs)*. 1132.
- Health and Retirement Study (2011). Sample sizes and response rates. Retrieved from University of Michigan, Health and Retirement Study website. <http://hrsonline.isr.umich.edu/>.
- House, J. S., Lepkowski, J. M., Kinney, A. M., Mero, R. P., Kessler, R. C., & Herzog, A. R. (1994). The social stratification of aging and health. *Journal of Health and Social Behavior*, *35*, 213–234. doi:10.2307/2137277
- Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: A review of twenty-seven community studies. *Journal of Health and Social Behavior*, *38*, 21–37. doi:10.2307/2955359
- Idler, E. L., & Kasl, S. V. (1995). Self-ratings of health: Do they also predict change in functional ability? *The Journals of Gerontology*,

- Series B: Psychological Sciences and Social Sciences*, 50, S344–S353. doi:10.1093/geronb/50B.6.S344
- Iweins, C., Desmette, D., Yzerbyt, V., & Stinglhamber, F. (2013). Ageism at work: The impact of intergenerational contact and organizational multi-age perspective. *European Journal of Work and Organizational Psychology*, 22, 331–346. doi:10.1080/1359432X.2012.748656
- Johnson, R. W. (2012). Older workers, retirement, and the great recession. https://web.stanford.edu/group/recessiontrends/cgi-bin/web/sites/all/themes/barron/pdf/Retirement_fact_sheet.pdf.
- Johnson, R. W., & Neumark, D. (1997). Age discrimination, job separations, and employment status of older workers: Evidence from self-reports. *Journal of Human Resources*, 32, 779–811. doi:10.2307/146428
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127, 376–407. doi:10.1037/0033-2909.127.3.376
- Kregel, K. C., & Zhang, H. J. (2007). An integrated view of oxidative stress in aging: Basic mechanisms, functional effects, and pathological considerations. *American Journal of Physiology*, 292, R18–R36. doi:10.1152/ajpregu.00327.2006
- Krings, F., Sczesny, S., & Kluge, A. (2011). Stereotypical inferences as mediators of age discrimination: The role of competence and warmth. *British Journal of Management*, 22, 187–201. doi:10.1111/j.1467-8551.2010.00721.x
- Kunze, F., Boehm, S. A., & Bruch, H. (2011). Age diversity, age discrimination climate and performance consequences – a cross organizational study. *Journal of Organizational Behavior*, 32, 264–290. doi:10.1002/job.698
- Lim, S., Cortina, L. M., & Magley, V. J. (2008). Personal and workgroup incivility: Impact on work and health outcomes. *The Journal of Applied Psychology*, 93, 95–107. doi:10.1037/0021-9010.93.1.95
- Lim, S., & Lee, A. (2011). Work and nonwork outcomes of workplace incivility: Does family support help? *Journal of Occupational Health Psychology*, 16, 95–111. doi:10.1037/a0021726
- Lusardi, A., & Mitchell, O. S. (2011). Financial literacy and retirement planning in the United States. *Journal of Pension Economics & Finance*, 10, 509–525. doi:10.1017/S147474721100045X
- Makinodan, T., Hahn, T. J., McDougall, S., Yamaguchi, D. T., Fang, M., & Iida-Klein, A. (1991). Cellular immunosenescence: An overview. *Experimental Gerontology*, 26, 281–288. doi:10.1016/0531-5565(91)90021-D
- Marchiondo, L. A., Gonzales, E., & Ran, S. (2016). Development and validation of the workplace age discrimination scale. *Journal of Business and Psychology*, 31, 493–513.
- McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *The New England Journal of Medicine*, 338, 171–179. doi:10.1056/NEJM199801153380307
- McGonagle, K. A., & Kessler, R. C. (1990). Chronic stress, acute stress, and depressive symptoms. *American Journal of Community Psychology*, 18, 681–706. doi:10.1007/BF00931237
- Moreno-Villanueva, M., & Bürkle, A. (2015). Molecular consequences of psychological stress in human aging. *Experimental Gerontology*, 68, 39–42. doi:10.1016/j.exger.2014.12.003
- Munnell, A. H. (2015). The average retirement age – An update (Center for Retirement Research at Boston College Research Brief No. 15-4). <http://crr.bc.edu/briefs/the-average-retirement-age-an-update/>.
- National Academy on an Aging Society. (2012). Cross-national perspectives on age discrimination. *Public Policy & Aging Report*, 22. Washington, DC: Oxford.
- National Bureau of Economic Development. (2010). US business cycle expansions and contractions [Data file]. <http://www.nber.org/cycles.html>.
- OECD.Stat (2016). OECD estimations from national labour force surveys (except earnings) [Data file]. <https://stats.oecd.org>.
- Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, 135, 531–554. doi:10.1037/a0016059
- Palmore, E. (2015). Ageism comes of age. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 70, 873–875. doi:10.1093/geronb/gbv079
- Porath, C. L., & Erez, A. (2009). Overlooked but not untouched: How rudeness reduces onlookers' performance on routine and creative tasks. *Organizational Behavior and Human Decision Processes*, 109, 29–44. doi:10.1016/j.obhdp.2009.01.003
- Posthuma, R. A., & Campion, M. A. (2009). Age stereotypes in the workplace: Common stereotypes, moderators, and future research directions? *Journal of Management*, 35, 158–188. doi:10.1177/0149206308318617
- Redman, T., & Snape, E. (2006). The consequences of perceived age discrimination amongst older police officers: Is social support a buffer? *British Journal of Management*, 17, 167–175. doi:10.1111/j.1467-8551.2006.00492.x
- Robert, S., & House, J. S. (1996). SES differentials in health by age and alternative indicators of SES. *Journal of Aging and Health*, 8, 359–388. doi:10.1177/089826439600800304
- Rupp, D. E., Vodanovich, S. J., & Crede, M. (2006). Age bias in the workplace: The impact of ageism and causal attributions. *Journal of Applied Social Psychology*, 36, 1337–1364. doi:10.1111/j.0021-9029.2006.00062.x
- Stewart, W. F., Ricci, J. A., Chee, E., Hahn, S. R., & Morganstein, D. (2003). Cost of lost productive work time among US workers with depression. *JAMA*, 289, 3135–3144. doi:10.1001/jama.289.23.3135
- Taylor, P., McLoughlin, C., Meyer, D., & Brooke, E. (2013). Everyday discrimination in the workplace, job satisfaction, and psychological wellbeing: Age differences and moderating variables. *Ageing and Society*, 33, 1105–1138. doi:10.1017/S0144686X12000438
- van den Heuvel, W. J., & van Santvoort, M. M. (2011). Experienced discrimination amongst European old citizens. *European Journal of Ageing*, 8, 291–299. doi:10.1007/s10433-011-0206-4
- Vauclair, C. M., Marques, S., Lima, M. L., Abrams, D., Swift, H., & Bratt, C. (2015). Perceived age discrimination as a mediator of the association between income inequality and older people's self-rated health in the European region. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 70, 901–912. doi:10.1093/geronb/gbu066
- Wang, D., Laidlaw, K., Power, M. J., & Shen, J. (2010). Older people's belief of filial piety in China: Expectation and non-expectation. *Clinical Gerontologist*, 33, 21–38. doi:10.1080/07317110903347771
- Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: how good are single-item measures? *The Journal of Applied Psychology*, 82, 247–252. doi:10.1037/0021-9010.82.2.247
- Wilkinson, L. R. (2016). Financial strain and mental health among older adults during the great recession. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 71, 745–754. doi:10.1093/geronb/gbw001