Perceived Interpersonal and Institutional Discrimination among Persons with Disability: Do Patterns Differ by Age?

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Extended abstract submitted for possible presentation at the 2019 annual meetings of the Population Association of America

ABSTRACT (150 words)

One-third of U.S. adults have an activity-limiting health condition and this proportion increases with age. However, it is unclear whether functional limitation renders one vulnerable to discrimination, and whether this vulnerability differs over the life course. Stigma theories suggest disablement would be more discrediting to younger persons, as it violates cultural norms and expectations regarding "able-bodied" young adults. We used data from the second wave of the National Survey of Midlife Development in the U.S. (n = 4,041) to evaluate whether persons with functional impairment report higher levels of perceived interpersonal mistreatment and institutional discrimination. Persons with impairment report more frequent encounters of disrespectful treatment, harassment, and being treated as if they have a character flaw, and elevated odds of workplace- and service-related discrimination, net of sociodemographic and health controls. Effects are significantly larger among midlife versus retirement-age persons. We discuss implications for cumulative disadvantage processes among persons with impairment.

INTRODUCTION

The consequences of interpersonal and institutional discrimination for physical and mental health are widely documented (Pascoe & Smart-Richman, 2009). Interpersonal mistreatment, such as being treated as if one were unintelligent or incompetent, and institutional discrimination, such as being fired, losing out on a promotion, or receiving inferior service from a health care provider on the basis of one's personal characteristics such as race, gender, body weight, or age has been linked to compromised health behaviors, depressive symptoms, reduced self-esteem, and heightened risk of physical health problems including hypertension and diabetes (Brondolo et al., 2003; Carr & Friedman, 2005; Pavalko, Mossakowski, & Hamilton, 2003; Tsenkova et al. 2010; Vogt Yuan, 2007; Williams & Willams-Morris, 2000).

Although the effects of perceived discrimination on physical and emotional well-being are well documented, we know of no population-based studies in the U.S. exploring whether physical health limitations, including difficulty performing daily activities like walking, climbing, or lifting, render one vulnerable to unkind or discriminatory treatment. Understanding experiences of perceived discrimination and mistreatment among persons with impairment is an important goal, as these stressful encounters can intensify the negative health consequences of underlying physical conditions (Tomiyama et al. 2018; Tsenkova et al., 2010). The Americans with Disability Act (ADA) prohibits institutional discrimination on the basis of one's physical conditions, although subtle yet pernicious forms of interpersonal and daily mistreatment may undermine the well-being of persons with impairment.

Disablement has been characterized as the "impacts that chronic and acute conditions have on …people's abilities to act in necessary, usual, expected, and personally desired ways in their society" (Verbrugge & Jette, 1994: 3). Classic sociological writings on stigma suggest that

persons with functional impairment may be devalued and consequently mistreated by others. Goffman (1963:3) defined stigma as any personal attribute that is "deeply discrediting" to its possessors; these attributes include "tribal stigmata," "abominations of the body," and "blemishes of individual character." Persons with physical limitations arguably fall into the latter two categories. Goffman's writings suggested that persons with disabilities, whether physical or mental, visible or invisible, were "disqualified from full social acceptance" (p. 3) both because their condition was unappealing to others and was a signal that a person may not be fully capable of carrying out expected social roles. Especially in western capitalist societies where being able-bodied is viewed as a marker of competence, vigor, and capacity to work, persons with activity limitations also may be viewed as possessing a "blemish of individual character" -- a malingerer who is faking or exaggerating their symptoms to get out of work and other responsibilities (Lingsom, 2008).

In this study, we explore whether persons with difficulty performing daily activities are at heightened risk of reporting interpersonal and institutional discrimination. We focus on three types of interpersonal mistreatment (being treated disrespectfully, being treated as if one has a character flaw, and being harassed), and two types of lifetime institutional discrimination (workplace and treatment by service providers). We also examine whether the association between disability and perceived discrimination varies over the life course, contrasting persons in early adulthood (age 30-39), early midlife (age 40-49), late midlife (age 50-59), and later life (ages 65+). We hypothesize that the stigma of disability will be particularly harmful for persons in their prime working years (i.e., young and midlife persons), because functional impairment is less common and thus a more salient personal characteristic. National estimates show that just 27 percent of working-age adults report a limitation performing daily activity, while this figure tops

60 percent among those ages 65+ (National Center for Health Statistics, 2017). Additionally, cultural expectations regarding physical functioning vary over the life course, such that older adults are presumed to have some physical limitations and are released from cultural expectations regarding industry and activity, whereas younger persons are expected to be physically and economically active and independent (e.g., McPherson, 1994).

We use data from the second wave of the National Survey of Midlife Development in the United States (MIDUS II) conducted between 2004 and 2006 (n = 4,041). All analyses are adjusted for demographic and socioeconomic characteristics including sex, race, marital status, education, occupation, and employment status, which are correlated with both physical disability (Krahn, Walker, & Correa-De-Araujo, 2015; Wong et al., 2015) and perceived discrimination (Carr, Jaffe, & Friedman, 2008; Kessler, Mickelson, & Williams, 1999). We also adjust for body mass index (BMI) and mental illness diagnosis as they are associated with disability (Kassam, Williams, & Patten, 2012; Krahn et al., 2015) and perceived discrimination (Carr & Friedman, 2005; Kessler et al., 1999). Finally, we adjust for negative affect which is a consequence of disablement and may render one particularly sensitive to unpleasant encounters such as interpersonal mistreatment (Carr et al., 2008; Matt, Vazquez, & Campbell, 1992).

METHODS

Data

Analyses are based on data from the second wave of the National Survey of Midlife Development in the United States (MIDUS II) conducted between 2004 and 2006. MIDUS is a longitudinal panel that was initiated in 1995 to better understand connections between psychosocial factors and health in more than 7,000 noninstitutionalized adults aged 25 to 74. Retention rates at the second wave were higher among women, whites, married people, and

people with more education and better health, with a 75% overall rate adjusted for mortality (Radler & Ryff, 2010). The present study is based on a subsample of 4,041 respondents who completed both a telephone interview and self-administered questionnaire (Age *M* = 57.3, *SD* = 11.4). We use data only from the second wave to ascertain associations between current disability and perceived institutional and interpersonal discrimination. The first wave of MIDUS data was collected 10 years earlier. As such, a prospective exploration of disability status at one wave and perceived discrimination at a subsequent wave would raise significant concerns, given the instability of both impairment presence and severity over such a long period (e.g. Lin & Kelley-Moore, 2017).

Measures

*Dependent Variable*s

We consider two aspects of perceived discrimination: daily interpersonal mistreatment and lifetime institutional discrimination using a widely used and validated set of items (Kessler et al., 1999; Williams, Yu, Jackson, & Anderson, 1997). *Daily interpersonal mistreatment* was assessed with the question "How often on a day-to-day basis do you experience each of the following [nine] types of discriminations?" Response categories were never, rarely, sometimes, and often. Instead of using a single composite scale (Brown et al., 2018), we constructed three conceptually and statistically distinct subscales to evaluate nuanced differences in the subtypes of perceived interpersonal discrimination (see Carr et al., 2008). *Lack of respect* ($\alpha = 0.91$) indicates the frequency with which one was: treated with less courtesy than other people; treated with less respect than other people; received poorer service than other people at restaurants or stores; treated as if not smart; and treated as if not as good as other people. *Blemish of character* ($\alpha = 0.72$) refers to the frequency with which one is: treated as if they are dishonest; and treated

as if they are frightening to others. *Harassment/teasing* ($\alpha = 0.82$) refers to the frequency with which one is: called names or insulted; and threatened or harassed. Responses were averaged, and the scores ranged from 1 to 4, where a 4 reflects more frequent perceived mistreatment.

Lifetime institutional discrimination was assessed with the question "How many times in your life have you been discriminated against because of race, ethnicity, gender, age, religion, physical appearance, sexual orientation, or other characteristics in each of the following ways?" We focus on two subtypes of discrimination: workplace and receiving services. *Workplace discrimination* includes: not hired for a job, not given a job promotion, and fired due to a personal characteristics. *Service discrimination* includes being denied a bank loan, denied or provided inferior medical care, and denied or provided inferior service by a plumber, car mechanic, or other service providers due to one's personal characteristics. We constructed a dummy variable indicating that one has ever experienced each type of institutional mistreatment (Byrne & Carr, 2005; Mays & Cochran, 2001).

*Independent Variable*s

Physical disability is the key independent variable. Functional difficulties or impairments were assessed in the self-administered questionnaire with items adapted from the SF-36, capturing difficulty with nine activities of daily living (Ware & Sherbourne, 1992). Participants were asked, "How much does your health limit you in doing each of the following? lifting or carrying groceries; bathing or dressing yourself; climbing several flights of stairs; bending, kneeling, or stooping; walking more than a mile; walking several blocks; walking one block; vigorous activity (e.g. running, lifting heavy objects); moderate activity (e.g. bowling, vacuuming)" Original responses ranged from 4 (not at all), 3 (a little), 2 (some), to 1 (a lot) for each item. Participants were coded as having physical disability if they reported at least "some"

difficulty on any of the nine items, consistent with previous MIDUS analyses (Friedman, 2016). We also conducted sensitivity analyses in which we classified persons as having a disability if they indicated "a lot" on any of the nine difficulty items, consistent with other studies using different surveys (e.g., Wong et al., 2015). Results were generally similar regardless of the measure used, so we used the less restrictive measure because it is more appropriate for capturing disablement among younger and midlife adults.

Moderating variable. To test whether the associations between physical disability and perceived discrimination differ significantly over the life course, we recoded participants' age into the categories of: early adulthood (ages 30-39), early midlife (ages 40-49), late midlife (ages 50-64), and older age (age 65 or older). Other studies used similar age ranges to differentiate life stages (e.g., Wilkinson, Ferraro, & Mustillo, 2018).

Control variables. We control for demographic characteristics including gender (1 = *female*, 0 = *male*), race/ethnicity (1 = *racial or ethnic minority*, 0 = *non-Hispanic white*), and marital status (1 = *currently married*, 0 = *unmarried*). Socioeconomic status variables included education (1 = *less than high school*, 2 = *high school graduate*, 3 = *some college*, 4 = *college graduate or higher*), employment status (1 = *currently working*, 0 = *currently not working*), and current or most recent occupation (1 = *upper white-collar*, 2 = *lower white-collar*, 3 = *blue-collar*). Upper white-collar encompassed professional, executive, and managerial occupations, and lower white-collar included sales and clerical occupations. Blue-collar included those who held crafts, operatives, labor, farm, and military occupations.

Three dimensions of physical and mental health are controlled in the models predicting perceived discrimination. Body mass index (BMI) was calculated based on self-reported height and weight; continuous BMI scores were recoded into four categories based on cut points

defined by National Heart, Lung, and Blood Institute guidelines (1998) (1 = *underweight*, 2 = *normal*, 3 = *overweight*, 4 = *obese*). Presence of clinically significant mental health disorders is an indicator whether participants were diagnosed with any of five clinically significant conditions, including major depression, generalized anxiety disorder, panic disorder, and alcohol and drug dependence in the year prior to the interview (Kessler et al., 1999; Mays & Cochran, 2001) (1= *presence of a clinical mental disorder*, 0 = *none*). The presence of major depression, anxiety and panic disorders was assessed during the phone interview by the administration of modules from the Composite International Diagnostic Interview Short Form, which were developed based on the definitions and criteria specified in the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders, third edition-revised (DSM-III-R; 1987). Two other disorders, alcohol and drug dependence, were assessed in the questionnaires based on the DSM fourth edition criteria (1994). Negative affect was assessed with a subset of items from the Positive-Negative Affect Scale (PANAS): "During the past 30 days, how much of the time did you feel: (a) so sad nothing could cheer you up; (b) nervous; (c) restless or fidgety; (d) hopeless; (e) that everything was an effort; and (f) worthless." Responses of each item ranged from 1 (none) to 5 (all the time); scale scores are the average response across the six items such that higher scores reflect more frequent negative affect. The scale items were culled from several well-known and valid instruments (Kessler et al., 1999).

Analytic Plan

First, we conducted bivariate analyses comparing perceived interpersonal mistreatment and lifetime discrimination, as well as demographic, socioeconomic, and health characteristics by disability group; we conducted *t*-tests for continuous measures and chi-square tests for categorical variables. Second, we estimated ordinary least squares regression models to assess

the extent to which living with physical disability is associated with perceived interpersonal mistreatment, after controlling for covariates. Similarly, we estimated logistic regression models to test the effects of physical disabilities on binary indicators of work- and service-related discrimination. We used hierarchical regression to evaluate the extent to which a documented effect of disability is accounted for by each explanatory block of covariates. In Model 1, we assess the unadjusted associations between disability and perceived discrimination. Model 2 incorporates demographic characteristics, Model 3 further includes socioeconomic characteristics (i.e., education, work, occupation), Model 4 adds in BMI, and Model 5 incorporates two mental health indicators (i.e., any clinical diagnosis, negative affect). Finally, we tested a two-way interaction term of disability by age group, to evaluate the extent to which the linkage between physical disability and perceived discrimination varies across the life stages, net of all controls. We used multiple imputation by chained equations (MICE) to impute missing data for all independent and control variables (Royston, 2004; Rubin, 1987); multivariate results are based on the imputed data. All analyses were conducted using STATA 15.0.

RESULTS

Bivariate Analysis

Table 1 shows sample characteristics in column 1, and bivariate analysis results in columns 3 and 4. Nearly 30 percent of the sample is retirement age, and just over half the sample (55 percent) is female. The MIDUS sample is over-representative of higher socioeconomic status (SES); fully 39 percent have a college degree or higher, 42 percent work in upper white-collar jobs, and 63 percent are currently employed. Only 15 percent have ever reported service-related discrimination yet 28 percent have ever experienced workplace discrimination.

The bivariate columns show that half of the analytic sample reported at least some impairment, with a very steep gradient by age. Just 23 percent of those in early adulthood report an impairment, compared to 71 percent among those ages 65 and older. A socioeconomic gradient also is evident, such that the proportion with disability decreases as education increases. Seven out of ten high school dropouts report an impairment whereas just 40 percent of college graduates do. Disability also is linked to body weight; 64 percent of obese persons but just 40 percent of normal weight persons report an impairment. About 62 percent of persons with a mental health disorder but just 40 percent of those without a mental disorder report impairment. Persons with impairment also reported significantly higher levels of negative affect than those without disabilities (1.64 vs. 1.39, $p < .000$).

[Table 1 about here]

With respect to perceived discrimination, persons with disabilities, as compared to those without disabilities, reported significantly more frequent encounters of disrespect (1.59 vs. 1.48, $p = .000$), being treated as if they had a character flaw (1.34 vs. 1.29, $p = .006$), and harassment (1.26 vs. 1.22, $p = .004$). They also were more likely to report experiencing lifetime workplace discrimination (31.7% vs. 24.7%, $p = .000$) and service discrimination (18.2% vs. 12.9%, $p = .000$) (not shown in table). For descriptive purposes, we also examined the attributions respondents made for their experiences of discrimination. Persons with disabilities were significantly more likely than those without disabilities to attribute their discriminatory experiences to physical disability (3.7% vs. 0.5%, $p = .000$), although one out of four people in our analytic sample with and without disabilities did not offer an attribution for their mistreatment.

Multivariate Analysis

Effects of Physical Disability on Perceived Discrimination

Multivariate results are presented in Tables 2 through 6. Results show that persons with disability report significantly higher levels of all three forms of interpersonal mistreatment relative to persons without disability, and these sizeable and significant effects persist even after controlling for four clusters of potential confounds. The analyses also show clear evidence of suppression effects across all outcomes, such that the unadjusted effect of disability on disrespectful treatment, being treated as if of poor character, and being harassed more than doubles in magnitude when demographic characteristics are added in Model 2. Similarly, the odds of reporting workplace discrimination and service-related discrimination increase by 21 and 16 percent respectively, when sociodemographic characteristics are controlled. This suppression reflects the fact that older persons are over-represented among those with impairment, yet are less likely than their younger counterparts to report mistreatment.

[Table 2 through 6 about here]

The subsequent models show that the association between disability and perceived discrimination barely changes when SES indicators and body weight are adjusted, although the mental health measures account for a considerable attenuation. For example, the effect of disability on disrespectful treatment, being treated as if of poor character, and harassment declined by roughly 40-50 percent although remained statistically significant after mental health measures were incorporated in Model 5. Persons with disabilities reported 0.09 point higher scores on lack of respect, 0.05 point higher scores on blemish of character, and 0.04 point higher scores on harassment relative to persons without disability after controlling for all personal characteristics. Similarly, after adjusting for any mental disorder and current negative affect, the odds of reporting workplace discrimination declined from 1.64 to 1.44, whereas the odds of

experiencing service-related discrimination declined from 1.69 to 1.48. Net of all controls, persons with impairment remained 1.5 times as likely as those without impairment to have reported lifetime institutional discrimination.

The multivariate analyses also revealed other factors linked to perceived discrimination. Reports of discrimination varied significantly by age, such that young and midlife adults reported significantly higher levels of all three types of interpersonal mistreatment, and roughly 1.5 to 1.8 times the odds of institutional discrimination relative to persons ages 65 and older. Consistent with prior studies, ethnic minorities reported significantly more frequent mistreatment than did whites, and the effects were most pronounced for the outcomes of lack of respect and character flaw ($b = 0.35$, $p < .001$ for each outcome). Persons of color also evidenced an almost twofold higher likelihood of experiencing any workplace or service discrimination in their lifetime, relative to their white counterparts. Women reported significantly less frequent harassment and treatment as if they were of flawed character, yet significantly more frequent encounters of disrespect and greater likelihood of experiencing any service discrimination, relative to men. Unmarried persons also reported significantly more frequent interpersonal mistreatment and showed a greater likelihood of reporting lifetime service discrimination.

Some SES characteristics were significantly associated with perceived discrimination: currently employed persons reported more frequent interpersonal mistreatment relative to non-working persons, including being treated with lack of respect and as if they were of flawed character. Similarly, blue-collar workers reported more frequent encounters of disrespect than upper white-collar workers. Yet, persons with postsecondary education were more likely than those with less education to report lifetime discrimination at a workplace or at a service institution, perhaps reflecting greater awareness of and sensitivity to institutional discrimination.

All three physical and mental health indicators significantly predicted perceived discrimination. Being obese was positively associated with reporting all forms of interpersonal and institutional discrimination. Overweight persons reported more frequent disrespectful treatment and higher odds of experiencing any workplace discrimination, relative to persons with normal body weight. Persons with compromised mental health, including both having a clinical mental disorder and reporting higher levels of negative affect, had a greater likelihood of reporting service and workplace discrimination and perceived a greater frequency of being treated with disrespect and as if they had poor character.

Moderation Analyses: Are Effects of Disability Contingent on Age?

The multivariate analyses show that persons with functional impairment report significantly more frequent interpersonal mistreatment and are more likely to experience lifetime institutional discrimination relative to those without disablement, and these effects are partially suppressed by the fact that older persons report more disablement but less mistreatment. Our next step is to evaluate whether the impact of disability on mistreatment differs significantly by life course stage. We tested two-way interaction terms of impairment by age group for each of the five outcomes and found evidence of statistically significant moderation for three outcomes: being treated with disrespect ($F(1,3879.8) = 4.93$, $p = .026$), being harassed ($F(1,3833.2) = 4.00$, $p = .045$), and lifetime service discrimination ($F(1,93314.8) = 4.76$, $p = .029$), after adjusting for all covariates. For ease of presentation, we plot the statistically significant two-way interaction terms in Figure 1 through 3, adjusted for all covariates.

Taken together, the moderation analyses show that physical disablement renders one particularly susceptible to discrimination in early and late midlife, relative to old age. Although disablement is linked with perceived discrimination on average, the effect is largest and

significant at midlife and much more modest in early and late adulthood. These results suggest that persons who have disability at an earlier life course stage than is normative are especially vulnerable to mistreatment, whereas those reporting impairment during their retirement years do not fare appreciably worse than their counterparts without such impairment.

Figure 1 shows that persons with disabilities reported the highest levels of disrespectful treatment in early midlife whereas their counterparts without disabilities showed steadily decreasing levels of disrespectful treatment over the life course. The significant marginal differences in frequency of disrespectful treatment between persons with and without disabilities were only evident in their early midlife (marginal difference = 0.16, $p = .000$) and late midlife (marginal difference = 0.10, $p = .001$).

[Figure 1 through 3 about here]

Similarly, Figure 2 displays differential effects of having physical disabilities on reporting harassment or teasing; a significant difference was evident only during one's early midlife (marginal difference = 0.08, $p = .01$) and late midlife (marginal difference = 0.07, $p = .005$), as the predicted levels of reporting harassment were highest in early midlife, followed by late midlife, for persons with disabilities. Finally, Figure 3 shows that persons with disability had consistently higher odds of reporting lifetime service discrimination, with these differences evident in early midlife (marginal difference = 0.10, $p = .007$), followed by late midlife (marginal difference = 0.07, $p = .041$). Statistically significant differences based on disablement status were not found in early adulthood and older age for any of the three outcomes, patterns which we suspect are due to the normativeness and expectedness of disability among the older population. The non-significant association in early adulthood may reflect limited statistical power, as just 69 young adults (1.8 percent of the total sample) reported impairment.

DISCUSSION

Research has documented that experiences of perceived discrimination and health are tightly tied, with most of this research focusing on the health consequences of discriminatory or insensitive treatment (Pascoe et al. 2009). Extensive research documents the toll that racism (Williams & Williams-Morris 2000), sexism (Pavalko et al., 2003), sizeism (Carr & Friedman, 2005), and ageism (Vogt Yuan, 2007) take on physical and emotional health. Further, discrimination magnifies well-documented race and socioeconomic disparities in health, such that the black-white gap in major health outcomes including hypertension are magnified among blacks who are exposed directly to discrimination (Brondolo, Gallo & Myers, 2006). Similarly, overweight and obese persons' elevated risk of hypertension and diabetes is amplified for those who have been mistreated on the basis of their high body weight (e.g., Tomiyama et al., 2018; Tsenkova et al., 2010).

However, few studies have explored the extent to which one's physical or functional health renders one vulnerable to interpersonal mistreatment and institutional discrimination. Most prior research on disability and discrimination has focused only on institutional discrimination in hiring and other employment issues (e.g. Jones, Finkelstein, & Koehoorn, 2018). Although a handful of studies focused on associations between perceived discrimination and disability, most of them used non-U.S. samples or focused on mental disability (Kassam et al., 2012; Kilpatrick & Taylor, 2018; Krieger, 2014). As such, the issue of life course variation in the relationship between disability and discrimination has largely been unaddressed. Our work extends the literature by using nationally representative sample, by considering multiple subtypes of mistreatment, and by exploring age/life course differences in linkages between disability and perceived discrimination.

In theory, discrimination against persons with physical disabilities is prohibited by law in the U.S. The Americans with Disability Act (ADA), which was passed by Congress in 1990 and amended in 2008, prohibits discrimination on the basis of disability in employment, services offered by public entities (including public transportation), public accommodations (including commercial facilities), and telecommunications. The ADA also requires employers and businesses to provide reasonable accommodations to qualified individuals with a disability. ADA is based on an expansive view of "disability" and encompasses both mental and physical medical conditions. Moreover, a condition does not need to be severe or permanent to qualify an individual for accommodation (Jasper, 2008). However, media reports and legal cases of persons being mistreated or stigmatized on the basis of health problems, even relatively minor ones such as back problems, controlled diabetes, a speech impediment or anxiety disorder, are common (see McMahon & Shaw, 2005).

We know of no population-based studies in the U.S. exploring whether the presence of self-reported disability is linked with experiences of perceived interpersonal mistreatment and institutional discrimination, nor whether documented associations between disability and discrimination are accounted for by other personal characteristics common among persons with impairment such as lower socioeconomic status and underlying mental health problems, both of which are independent risk factors for discrimination. Our study documented a clear association between functional limitation and five distinctive types of discrimination, and these effects persisted after adjusting for an extensive set of confounds.

We also found that these effects are most pronounced in early (ages 40 to 49) and late (ages 50 to 59) midlife, relative to the retirement years (age 65+) or young adulthood (ages 30 to 39). We propose three main reasons for these patterns, which we will elaborate more fully in the

final paper. First, impairment in early and later midlife is less statistically normative than in older age, and thus may be both more salient to observers and judged more harshly by them. Age-related cultural and normative expectations hold that working-age adults should be physically and economically independent, although these expectations are relaxed for older adults (McPherson, 1994). Somewhat surprisingly, the moderation analyses revealed only weak and nonsignificant effects of disablement on young adults' experiences of discrimination. This may reflect weak statistical power, given that just 69 persons ages 30-39 reported impairment. It may also reflect the fact that young adults with impairment may have had such conditions since birth or childhood, and thus have adapted successfully to the early onset of activity-limiting conditions (e.g., Molton & Yorkston, 2017).

Second, the life spaces or daily activities one engages in vary widely over the life course, such that working age persons are exposed to a larger set of social environments and actors than their older counterparts (Baker et al., 2003). Experiences of unkind or disrespectful treatment by others will necessarily be more frequent among those who have more frequent, varied, or numerous encounters of any kind with coworkers, service providers, or other "consequential strangers" (Blau & Fingerman 2009), supporting our findings on greater discrimination in midlife than later life among persons with impairment. On the other hand, we did not find evidence of greater perceived mistreatment among young adults with physical impairment than their age peers without impairment. Young persons with early onset of impairment might have learned early on how to adapt their activities and social encounters to meet their needs, limiting their exposure to distressing or discriminatory interpersonal and institutional encounters (King, Law, Hurley, Petrenchik, & Schwellnus, 2010).

Third, the stronger linkage between impairment and perceived mistreatment may reflect cohort rather than age effects, such that members of the Baby Boom and Generation X cohorts are more sensitive to and aware of issues of discrimination, whereas older cohorts may be less cognizant of or willing to acknowledge structural inequalities and mistreatment. Further, the younger MIDUS participants, born in the late 1960s and early 1970s, would have entered the labor market following the passage of the ADA. As such, they may have received adequate accommodations, the benefit of school-to-work or work-based initiatives, and more thoughtful treatment in their work and social encounters in adulthood (Shandra & Hogan, 2008). However, using a single cross-sectional wave of MIDUS data, we cannot distinguish age versus cohort effects.

Our study has several additional limitations. First, the MIDUS, like most social science studies of discrimination, relies on perceptions rather than formally documented or confirmed reports of mistreatment. Perceptions are important in their own right, however, and may have important consequences for the perceiver's health and well-being (Thomas & Znaniecki, 1918:79). Second, our measure of institutional discrimination is a lifetime measure, and may refer to experiences that occurred years earlier when a person experienced a different physical health status. Thus, future research should explore the ways that functional impairment trajectories over the life course affect one's perceptions of and attributions for experiences of both institutional and interpersonal discrimination.

Despite these limitations, we believe that our study provides persuasive evidence that persons with functional limitations face diverse forms of stigmatization in the United States today. Persons with disability, especially those of working age, perceive that they are subjected to unfair treatment in terms of employment and service provision, and daily encounters marked

by disrespectful treatment. Future studies should explore whether the increasing prevalence of functional limitation in the United States will lead to more or less widespread discrimination. Recent data show that the proportion of working age persons, especially low-income persons, either reporting a physical impairment or receiving disability payments has increased steadily over the past two decades (Joffe-Walt, 2013). Theoretical writings suggest that the specific stigmas eliciting negative reactions from others may change over time as knowledge, tastes, and public acceptance of "deviant" conditions and behaviors change (Archer, 1985). As more Americans experience relatively young onset of physical limitations, biases may be reduced because awareness of disability-based inequities may increase. However, if disability continues to prematurely befall (and becoming associated with) members of historically stigmatized groups including lower income persons, ethnic minorities, and persons with obesity, it is plausible that the stigma will intensify. Public education about the distinctive challenges facing persons with even modest and invisible impairments may help to reduce unfair treatment of them.

Table 1. Univariate and Bivariate (by Disability Status) Statistics

Variable [1]	Total *M* (SD), %	No disability [2] *M* (SD), %	Any disability [2] *M* (SD), %	Group difference
Sample characteristics				
Life stage				
Early adulthood (age 30-39)	7.5	76.6	23.4	$p = .000$
Early midlife (age 40-49)	23.5	67.5	32.5	
Late midlife (age 50-64)	39.6	51.7	48.3	
Older age (age 65 or older)	29.4	29.2	70.9	
Gender (1 = female)	55.2	46.3	53.7	$p = .000$
Race/ethnicity (1 = minority)	8.5	50.3	46.7	$p = .319$
Marital status (1 = currently married)	71.3	76.2	66.1	$p = .000$
Education				
< high school graduate	7.2	30.7	69.3	$p = .000$
High school graduate	25.6	42.5	57.5	
Some college	28.7	50.0	50.0	
> college graduate	38.6	60.3	39.7	
Current (or most recent) occupation				
Upper white-collar	41.8	55.9	44.2	$p = .000$
Lower white-collar	36.0	45.7	54.3	
Blue-collar/farm/military	22.3	49.6	50.4	
Working status (1 = currently working)	63.1	61.4	38.6	$p = .000$
Body Mass Index				
Underweight (< 18.5 kg/m^2)	1.1	54.8	45.2	$p = .000$
Normal (18.5-24.9 kg/m^2)	31.1	60.5	39.6	
Overweight (25.0-29.9 kg/m^2)	39.5	54.9	45.9	
Obese (30 or greater kg/m^2)	28.2	36.0	64.0	
Clinical mental disorders (1= yes)	16.2	38.5	61.5	$p = .000$
Negative affect (1-5)	1.51 (0.58)	1.39 (0.46)	1.64 (0.66)	$p = .000$
Perceived discrimination				
Lack of respect, daily (1-4)	1.53 (0.60)	1.48 (0.57)	1.59 (0.62)	$p = .000$
Blemish of character, daily (1-4)	1.32 (0.52)	1.29 (0.50)	1.34 (0.54)	$p = .006$
Harassment, daily (1-4)	1.24 (0.47)	1.22 (0.44)	1.26 (0.49)	$p = .004$
Ever experienced workplace discrimination (1 = yes) [3]	28.1	45.6	54.5	$p = .000$
Ever experienced service discrimination (1 = yes)	15.4	43.2	56.8	$p = .000$
n	3,931	1,992	1,939	
Percent (%)	100	50.7	49.3	

M = mean; SD = standard deviation

Source. Midlife Development in the United States, second wave (MIDUS II, 2005-2006).

[1] Data were based on valid cases on the disability variable. Missingness was less than 3% across all variables, except two lifetime discrimination (7.6% missing for each) and obesity (5.7% missing) variables.

[2] Each row of categorical variables represents the proportion accounted by persons without and with disabilities, respectively.

[3] Results were highly comparable whether the question was applied to all respondents or those who have ever worked for a paid job at least 6 months.

Table 2. OLS Regression Model Predicting Experiences of Being Treated with Lack of Respect (*n* = 3,966)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b (s.e.)	b (s.e.)	b (s.e.)	b (s.e.)	b (s.e.)
Physical disability [a]	0.12 (0.02)***	0.18 (0.02)***	0.17 (0.02)***	0.15 (0.02)***	0.09 (0.02)***
Life stage [b]					
Early adulthood		0.31 (0.04)***	0.31 (0.04)***	0.31 (0.04)***	0.20 (0.04)***
Early midlife		0.30 (0.03)***	0.30 (0.03)***	0.29 (0.03)***	0.20 (0.03)***
Late midlife		0.20 (0.02)***	0.20 (0.02)***	0.19 (0.02)***	0.13 (0.02)***
Racial/ethnic minority [c]		0.39 (0.03)***	0.38 (0.03)***	0.37 (0.03)***	0.35 (0.03)***
Female [d]		0.05 (0.02)**	0.05 (0.02)**	0.06 (0.02)**	0.06 (0.02)**
Currently married [e]		-0.12 (0.02)***	-0.12 (0.02)***	-0.12 (0.02)***	-0.09 (0.02)***
Education [f]					
< high school grad			0.09 (0.04)*	0.08 (0.04)*	0.03 (0.04)
high school grad			0.08 (0.03)**	0.07 (0.03)**	0.05 (0.03)
some college			0.04 (0.02)	0.03 (0.02)	0.02 (0.02)
Current occupation [g]					
Lower white-collar			0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Blue/farm/military			0.05 (0.03)	0.05 (0.03)	0.05 (0.03)*
Currently working [h]			0.02 (0.02)	0.02 (0.02)	0.05 (0.02)*
Body Max Index [i]					
Underweight				0.04 (0.09)	0.05 (0.09)
Overweight				0.05 (0.02)*	0.05 (0.02)*
Obese				0.10 (0.03)***	0.09 (0.02)***
Any mental disorder [j]					0.08 (0.03)**
Negative affect					0.21 (0.02)***
Constant	1.48 (0.01)***	1.30 (0.03)***	1.23 (0.03)***	1.20 (0.04)***	0.93 (0.04)***
Mean adjusted R^2	0.01	0.09	0.10	0.10	0.15

Source. Midlife Development in the United States, second wave (MIDUS II, 2005-2006).
Note. Unstandardized coefficients and standard errors, as well as fit statistics, are based on 20 imputations. Reference groups are (a) no disability, (b) older age, (c) non-Hispanic white, (d) male, (e) unmarried, (f) college grad or higher, (g) upper white-collar, (h) not working, (i) normal weight, and (j) no mental disorder.
*p < .05, **p < .01, ***p < .001

Table 3. OLS Regression Predicting Being Treated as of One is of Poor Character (*n* = 3,959)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b (s.e.)	b (s.e.)	b (s.e.)	b (s.e.)	b (s.e.)
Physical disability [a]	0.05 (0.02)**	0.11 (0.02)***	0.10 (0.02)***	0.09 (0.02)***	0.05 (0.02)**
Life stage [b]					
Early adulthood		0.25 (0.03)***	0.24 (0.04)***	0.24 (0.04)***	0.18 (0.04)***
Early midlife		0.21 (0.02)***	0.21 (0.03)***	0.20 (0.03)***	0.14 (0.03)***
Late midlife		0.12 (0.02)***	0.12 (0.02)***	0.11 (0.02)***	0.08 (0.02)***
Racial/ethnic minority [c]		0.38 (0.03)***	0.37 (0.03)***	0.36 (0.03)***	0.35 (0.03)***
Female [d]		-0.12 (0.02)***	-0.12 (0.02)***	-0.12 (0.02)***	-0.12 (0.02)***
Currently married [e]		-0.08 (0.02)***	-0.08 (0.02)***	-0.08 (0.02)***	-0.07 (0.02)***
Education [f]					
< high school grad			0.09 (0.04)**	0.08 (0.04)*	0.05 (0.03)
high school grad			0.05 (0.02)*	0.05 (0.02)*	0.03 (0.02)
some college			0.04 (0.02)*	0.04 (0.02)	0.03 (0.02)
Current occupation [g]					
Lower white-collar			0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Blue/farm/military			0.03 (0.02)	0.03 (0.02)	0.03 (0.02)
Currently working [h]			0.02 (0.02)	0.02 (0.02)	0.05 (0.02)*
Body Max Index [i]					
Underweight				-0.06 (0.08)	-0.05 (0.08)
Overweight				0.03 (0.02)	0.03 (0.02)
Obese				0.08 (0.02)***	0.08 (0.02)***
Any mental disorder [j]					0.05 (0.02)*
Negative affect					0.12 (0.02)***
Constant	1.29 (0.01)***	1.24 (0.03)***	1.19 (0.03)***	1.17 (0.03)***	1.02 (0.04)***
Mean adjusted R^2	0.00	0.08	0.08	0.09	0.11

Source. Midlife Development in the United States, second wave (MIDUS II, 2005-2006).
Note. Unstandardized coefficients and standard errors, as well as fit statistics, are based on 20 imputations. Reference groups are (a) no disability, (b) older age, (c) non-Hispanic white, (d) male, (e) unmarried, (f) college grad or higher, (g) upper white-collar, (h) not working, (i) normal weight, and (j) no mental disorder.
*p < .05, **p < .01, ***p < .001

Table 4. OLS Regression Predicting Experiences of Harassment (*n* = 3,978)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b (s.e.)	b (s.e.)	b (s.e.)	b (s.e.)	b (s.e.)
Physical disability [a]	0.04 (0.01)**	0.09 (0.02)***	0.09 (0.02)***	0.08 (0.02)***	0.04 (0.02)*
Life stage [b]					
Early adulthood		0.24 (0.03)***	0.24 (0.03)***	0.24 (0.03)***	0.18 (0.03)***
Early midlife		0.19 (0.02)***	0.19 (0.02)***	0.18 (0.02)***	0.13 (0.02)***
Late midlife		0.13 (0.02)***	0.13 (0.02)***	0.13 (0.02)***	0.09 (0.02)***
Racial/ethnic minority [c]		0.16 (0.03)***	0.16 (0.03)***	0.15 (0.03)***	0.14 (0.03)***
Female [d]		-0.07 (0.01)***	-0.07 (0.02)***	-0.07 (0.02)***	-0.07 (0.02)***
Currently married [e]		-0.11 (0.02)***	-0.11 (0.02)***	-0.11 (0.02)***	-0.10 (0.02)***
Education [f]					
< high school grad			0.05 (0.03)	0.04 (0.03)	0.02 (0.03)
high school grad			0.02 (0.02)	0.01 (0.02)	-0.00 (0.02)
some college			0.01 (0.02)	0.01 (0.02)	0.00 (0.02)
Current occupation [g]					
Lower white-collar			0.02 (0.02)	0.02 (0.02)	0.02 (0.02)
Blue/farm/military			0.03 (0.02)	0.04 (0.02)	0.04 (0.02)
Currently working [h]			0.01 (0.02)	0.01 (0.02)	0.03 (0.02)
Body Max Index [i]					
Underweight				0.11 (0.07)	0.12 (0.07)
Overweight				0.03 (0.02)	0.03 (0.02)
Obese				0.07 (0.02)***	0.07 (0.02)**
Any mental disorder [j]					0.02 (0.02)
Negative affect					0.13 (0.01)***
Constant	1.22 (0.01)***	1.19 (0.02)***	1.16 (0.03)***	1.14 (0.03)***	0.98 (0.03)***
Mean adjusted R^2	0.00	0.05	0.05	0.05	0.09

Source. Midlife Development in the United States, second wave (MIDUS II, 2005-2006).

Note. Unstandardized coefficients and standard errors, as well as fit statistics, are based on 20 imputations. Reference groups are (a) no disability, (b) older age, (c) non-Hispanic white, (d) male, (e) unmarried, (f) college grad or higher, (g) upper white-collar, (h) not working, (i) normal weight, and (j) no mental disorder.

*p < .05, **p < .01, ***p < .001

Table 5. Logistic Regression Predicting Lifetime Report of Workplace Discrimination (*n* = 3,733)

	Model 1	Model 2	Model 3	Model 4	Model 5
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Physical disability [a]	1.41***	1.71***	1.79***	1.64***	1.44***
	(1.22 - 1.63)	(1.46 - 2.00)	(1.53 - 2.10)	(1.39 - 1.94)	(1.22 - 1.71)
Life stage [b]					
Early adulthood		2.23***	2.16***	2.13***	1.64**
		(1.64 - 3.03)	(1.57 - 2.98)	(1.54 - 2.94)	(1.17 - 2.29)
Early midlife		2.08***	2.02***	1.93***	1.54***
		(1.67 - 2.59)	(1.59 - 2.58)	(1.51 - 2.47)	(1.19 - 1.97)
Late midlife		2.10***	2.05***	1.98***	1.70***
		(1.73 - 2.54)	(1.66 - 2.53)	(1.61 - 2.45)	(1.37 - 2.11)
Racial/ethnic minority [c]		1.93***	1.97***	1.89***	1.85***
		(1.51 - 2.46)	(1.54 - 2.52)	(1.47 - 2.42)	(1.44 - 2.38)
Female [d]		0.95	0.97	1.02	0.99
		(0.82 - 1.11)	(0.82 - 1.13)	(0.87 - 1.20)	(0.84 - 1.17)
Currently married [e]		0.89	0.89	0.88	0.93
		(0.76 - 1.05)	(0.75 - 1.04)	(0.75 - 1.04)	(0.79 - 1.10)
Education [f]					
< high school grad			0.64**	0.59**	0.51***
			(0.45 - 0.90)	(0.42 - 0.84)	(0.36 - 0.73)
high school grad			0.71**	0.68***	0.64***
			(0.57 - 0.88)	(0.54 - 0.84)	(0.51 - 0.79)
some college			0.87	0.85	0.82
			(0.72 - 1.06)	(0.70 - 1.03)	(0.68 - 1.00)
Current occupation [g]					
Lower white-collar			0.97	0.96	0.94
			(0.80 - 1.17)	(0.80 - 1.16)	(0.78 - 1.14)
Blue/farm/military			0.92	0.92	0.93
			(0.73 - 1.14)	(0.73 - 1.14)	(0.75 - 1.17)
Currently working [h]			0.99	0.98	1.08
			(0.83 - 1.19)	(0.82 - 1.18)	(0.90 - 1.31)
Body Mass Index [i]					
Underweight				0.88	0.91
				(0.40 - 1.97)	(0.40 - 2.06)
Overweight				1.30**	1.31**
				(1.08 - 1.57)	(1.08 - 1.58)
Obese				1.71***	1.70***
				(1.40 - 2.09)	(1.39 - 2.09)
Any mental disorder [j]					1.56***
					(1.26 - 1.93)
Negative affect					1.40***
					(1.22 - 1.61)

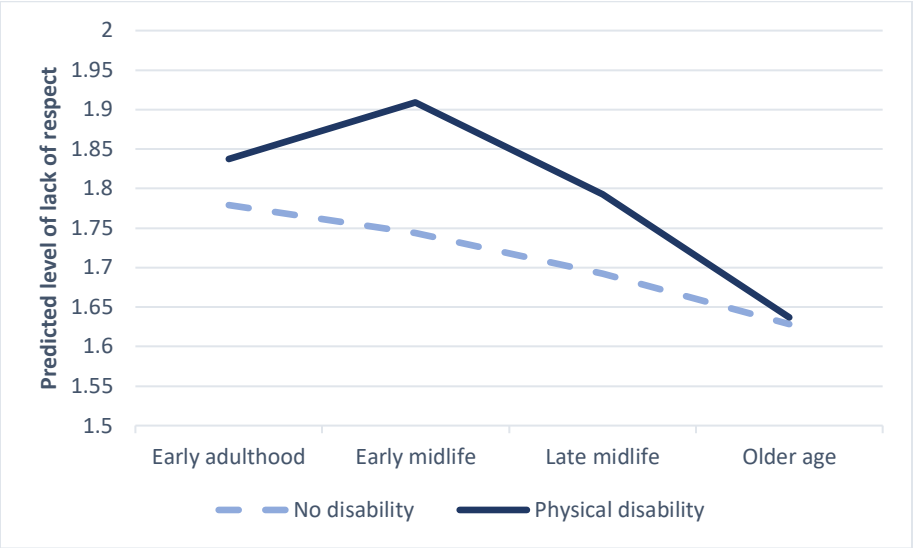
Source. Midlife Development in the United States, second wave (MIDUS II, 2005-2006). *Note*. Odds Ratios (OR) and 95% confidence interval (CI) are presented. Reference groups are (a) no disability, (b) older age, (c) non-Hispanic white, (d) male, (e) unmarried, (f) college grad or higher, (g) upper white-collar, (h) not working, (i) normal weight, and (j) no mental disorder. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 6. Logistic Regression Predicting Odds of Lifetime Report of Service Discrimination (*n* = 3,721)

	Model 1	Model 2	Model 3	Model 4	Model 5
	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)	OR (95%CI)
Physical disability [a]	1.49***	1.73***	1.80***	1.69***	1.48***
	(1.25 - 1.79)	(1.42 - 2.10)	(1.48 - 2.21)	(1.38 - 2.08)	(1.20 - 1.83)
Life stage [b]					
Early adulthood		2.39***	2.33***	2.27***	1.72**
		(1.64 - 3.48)	(1.57 - 3.45)	(1.52 - 3.37)	(1.15 - 2.59)
Early midlife		2.41***	2.35***	2.25***	1.78***
		(1.83 - 3.17)	(1.74 - 3.17)	(1.66 - 3.05)	(1.30 - 2.43)
Late midlife		1.91***	1.88***	1.82***	1.54**
		(1.50 - 2.45)	(1.44 - 2.46)	(1.39 - 2.38)	(1.17 - 2.03)
Racial/ethnic minority [c]		2.06***	2.08***	2.01***	1.97***
		(1.56 - 2.72)	(1.57 - 2.76)	(1.52 - 2.67)	(1.48 - 2.62)
Female [d]		1.82***	1.95***	1.99***	1.95***
		(1.50 - 2.21)	(1.58 - 2.40)	(1.61 - 2.45)	(1.58 - 2.42)
Currently married [e]		0.76**	0.76**	0.76**	0.80*
		(0.63 - 0.93)	(0.63 - 0.93)	(0.62 - 0.93)	(0.66 - 0.98)
Education [f]					
< high school grad			0.67	0.63*	0.55**
			(0.44 - 1.02)	(0.42 - 0.97)	(0.36 - 0.85)
high school grad			0.66**	0.65**	0.61***
			(0.50 - 0.88)	(0.49 - 0.85)	(0.46 - 0.80)
some college			0.89	0.87	0.85
			(0.70 - 1.13)	(0.69 - 1.11)	(0.67 - 1.08)
Current occupation [g]					
Lower white-collar			0.97	0.96	0.94
			(0.77 - 1.23)	(0.76 - 1.22)	(0.74 - 1.20)
Blue/farm/military			1.17	1.18	1.19
			(0.89 - 1.56)	(0.89 - 1.56)	(0.89 - 1.58)
Currently working [h]			0.98	0.97	1.08
			(0.78 - 1.22)	(0.78 - 1.22)	(0.86 - 1.36)
Body Mass Index [i]					
Underweight				1.04	1.10
				(0.42 - 2.59)	(0.44 - 2.76)
Overweight				1.04	1.04
				(0.82 - 1.32)	(0.82 - 1.32)
Obese				1.41**	1.39*
				(1.10 - 1.81)	(1.08 - 1.79)
Any mental disorder [j]					1.38*
					(1.07 - 1.77)
Negative affect					1.41***
					(1.20 - 1.66)

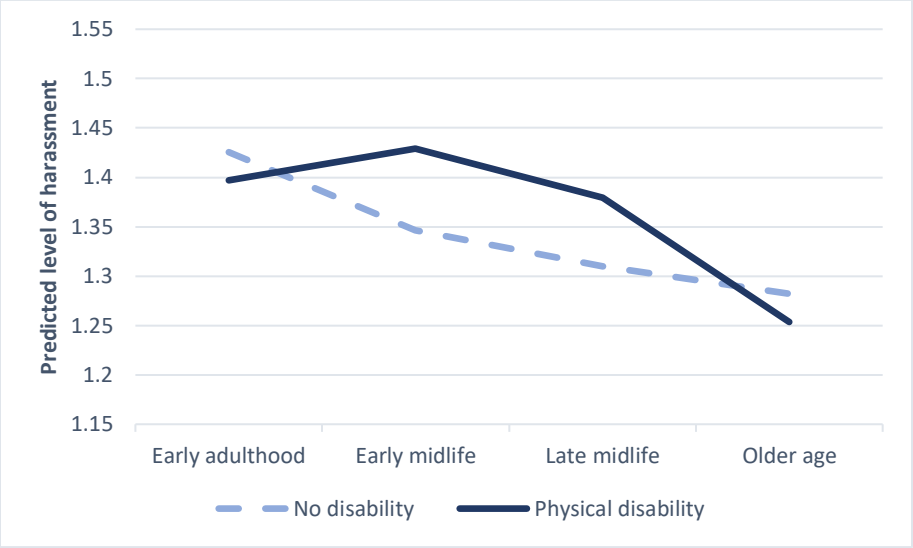
Source. Midlife Development in the United States, second wave (MIDUS II, 2005-2006).
Note. Odds Ratios (OR) and 95% confidence interval (CI) are presented. Reference groups are (a) no disability, (b) older age, (c) non-Hispanic white, (d) male, (e) unmarried, (f) college grad or higher, (g) upper white-collar, (h) not working, (i) normal weight, and (j) no mental disorder. *$p < .05$, **$p < .01$, ***$p < .001$.

Figure 1. Adjusted Levels of Being Treated with Lack of Respect across Life Stages by Disability Status



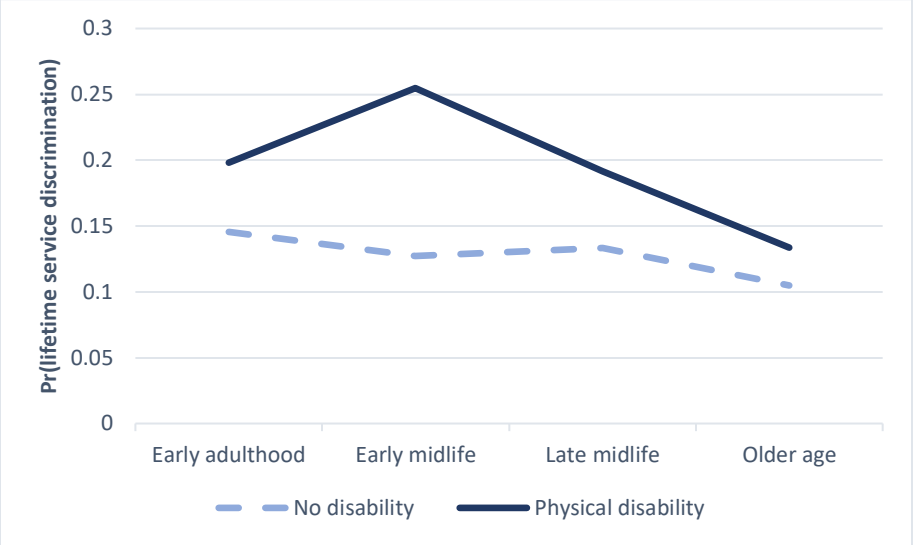
Note. Significant marginal differences by disability status were found in early midlife (0.16, p = .000) and late midlife (0.10, p = .001).

Figure 2. Adjusted Levels of Perceiving Harassment across Life Stages by Disability Status



Note. Significant marginal differences by disability status were found in early midlife (0.08, p = .01) and late midlife (0.07, p = .005).

Figure 3. Adjusted Probabilities of Reporting Lifetime Service Discrimination across Life Stages by Disability Status



Note. Significant marginal differences by disability status were found in early midlife (0.10, p = .007) and late midlife (0.07, p = .041).

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