

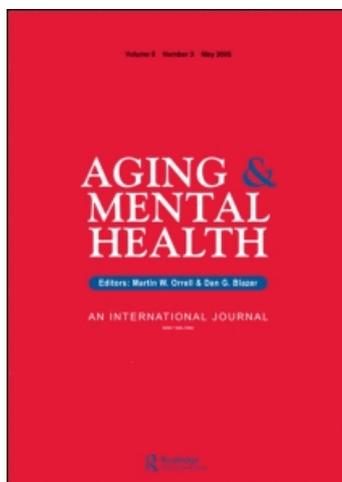
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The relationships between major lifetime discrimination, everyday discrimination, and mental health in three racial and ethnic groups of older adults

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Objectives: To evaluate the relationships between perceived exposure to major lifetime discrimination, everyday discrimination, and mental health in three racial/ethnic groups of older adults.

Design: The Health and Retirement Study is a nationally representative sample of individuals 50 years and older living in the United States. A total of 6455 Whites, 716 Latinos, and 1214 Blacks were eligible to complete a self-report psychosocial questionnaire in the year 2006.

Results: Whereas 30% of the general population reported at least one type of major lifetime discrimination, almost 45% of Black older adults reported such discrimination. Relative to the other two racial/ethnic groups (82% Whites, 82.6% Blacks), Latinos were significantly less likely to report any everyday discrimination (64.2%), whereas Blacks reported the greatest frequency of everyday discrimination. Whites reported the highest levels of life satisfaction and the lowest levels of depressive symptoms. Relative to major lifetime discrimination, everyday discrimination had a somewhat stronger correlation with mental health indicators. The relationships between discrimination and mental health outcomes were stronger for White compared to Black older adults, although everyday discrimination was still significantly associated with outcomes for Black older adults.

Conclusions: Black older adults experience the greatest number of discriminative events, but weaker associated mental health outcomes. This could be because they have become accustomed to these experiences, benefit from social or cultural resources that serve as buffers, or selective survival, with the present sample capturing only the most resilient older adults who have learned to cope with the deleterious effects of discrimination.

Keywords: cross-cultural; race; ethnicity; mental health; discrimination

Introduction

Perceived discrimination is defined broadly as an individual's perception of being treated unfairly by other people due to some personal attribute such as race, ethnicity, age, gender, socioeconomic status, weight, sexual orientation, or other characteristics (Kessler, Mickelson, & Williams, 1999). In the United States, most research on perceived discrimination has focused on race and ethnicity using categories defined by the US Census Bureau. The Census Bureau defines race and ethnicity as two separate categories based on individuals' self-report. The most common racial/ethnic categories in the United States are White (i.e., White race, non-Hispanic origin), Black (i.e., Black or African-American race), and Latino (i.e., White or Black race, ethnicity of Hispanic origin – a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race) (Budget, 1997). In this article, 'ethnic' is used inclusively to refer to racial or ethnic categories.

Although research has consistently documented greater perceived discrimination among ethnic minorities relative to Whites (Barnes et al., 2004; Kessler et al., 1999), the differential role of perceived discrimination across ethnic groups is less clearly established.

Some research has documented a relationship between perceived discrimination and higher blood pressure in older Blacks but not in older Whites (Lewis et al., 2009), yet others reported an inverse relationship in older Blacks (Peters, 2004). Similarly, whereas some found mental disorders to be higher among ethnic minorities who reported unfair treatment associated with everyday discrimination (Bhui et al., 2005), others have shown that perceived discrimination is a stronger mortality risk for Whites than for Blacks (Barnes et al., 2008) and that race-related stress has a more adverse impact on the mental health functioning of Whites as compared to Blacks (Williams, Yan, Jackson, & Anderson, 1997). To account for the findings, researchers have argued that because discrimination is a more prevalent and thus, a more expected phenomenon in the life of ethnic minorities, ethnic minorities have learned to better cope with it. In contrast, perceived discrimination might be particularly deleterious in older Whites who may experience discrimination in old age for the first time in their life (Barnes et al., 2008). Selective survival may also explain these findings, so that only the most resilient older adults who have learned to cope with discrimination participate in such studies. Given these

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somewhat conflicting findings, further research is needed in order to identify the differential role of perceived discrimination in the mental health and well-being of various ethnic groups.

Important distinctions between perceived major lifetime discrimination and everyday discrimination exist. Not only do the two types of perceived discrimination differ based on their magnitude (e.g., major life events vs. minor daily hassles), but they also differ based on their timeframe, with the former concerning events that might have happened many years ago and the latter concerning more recent events. In addition, major lifetime discrimination concerns primarily events of impact on one's socioeconomic status, whereas everyday discrimination is focused primarily on assaults to one's character (Kessler et al., 1999). The frequency of the two types of discrimination is also expected to differ, with everyday discrimination being more frequent than major lifetime discrimination. Overall, research has shown that everyday discrimination takes a greater toll on one's mental health than major lifetime discrimination (Kessler et al., 1999). This, however, could be attributed to any combination of the characteristics that distinguish between the two types of perceived discrimination. Comparing the relative impact of the two types of perceived discrimination in a sample of older adults is particularly valuable as older minorities might have experienced worse forms of discrimination prior to the civil right's movement of the 1960s, whereas older Whites and minorities alike might have experienced more recent discrimination because of old age, rather than due to their ethnic origin.

Because of the subjective nature of perceived discrimination, it is possible that the attribution of discrimination to different causal mechanisms has a differential relationship with one's mental health. Although past research has shown a great variability in the causes attributed to discrimination, with Blacks being more likely to attribute discrimination to their race and less likely to attribute discrimination to several other demographic variables, there are no conclusive findings concerning the relationship between the attribution of discrimination and one's mental health (Kessler et al., 1999).

This study evaluates the role of major lifetime discrimination vs. everyday discrimination as correlates of mental health in a national sample of older adults residing in the United States. This is one of very few studies to evaluate exposure to discrimination in older adults. An additional strength of this study is the fact that it evaluates the correlates of discrimination not only in Blacks vs. Whites, but also in Latinos, one of the fastest growing ethnic groups in the United States that has not been extensively studied with regard to the deleterious effects of discrimination. This study has the advantage of evaluating whether the attribution of everyday discrimination to age vs. race plays a role in older adults' mental health. Moreover, by evaluating the specific timeframe in which major

lifetime discrimination occurred, this study provides a temporal context to discrimination and its effects.

It was expected that ethnic minorities report higher levels of perceived discrimination relative to Whites. Based on past research, it was expected that major lifetime discrimination has a weaker relationship with mental health than everyday discrimination. It was also expected that discrimination show a differential pattern in the different ethnic groups. Given equivocal findings concerning the relationship between perceived discrimination and mental health in the various ethnic groups, there were no *a priori* hypotheses about the magnitude and direction of effect within the various ethnic groups. Finally, it was expected that Blacks and Latinos attribute discrimination to race and report more distant discriminatory events associated with race. In contrast, it was also expected that Whites attribute discrimination primarily to age and report more recent discriminatory events. It was further expected that age attributions have a stronger association with older adults' mental health relative to race attributions. This is because of the relative novelty of age as a source of discrimination and the fact that older adults may not have had as much experience coping with age discrimination, relative to ethnic discrimination, which likely has been present throughout one's life.

Methods

The Health and Retirement Study (HRS) is a longitudinal epidemiological survey of a nationally representative sample of individuals 50 years and older living in the United States. The HRS is sponsored by the National Institute of Aging and is conducted by the University of Michigan. The study is reviewed and approved by the University of Michigan's Health Sciences Institutional Review Board. The original HRS core sample design is a multi-stage area probability sample of households, with oversamples of Blacks, Latinos, and residents of Florida. The target population of the HRS cohort includes all adults born during the years 1931–1941, residing in the United States. Participants take part in a biennial interview that covers a range of topics including income, wealth, work, retirement, health, health care utilization, etc.

Baseline data for this study were collected in the year 2006. Of the 18,469 respondents who participated in the core interview, 8566 were eligible to complete a self-report psychosocial questionnaire. Of these, 183 respondents who self-identified their ethnicity as 'other' were excluded from further analysis. The analytic sample for this study concerns those 7488 (86% White, 8% Black, 5% Latino) individuals who responded to questions concerning major lifetime discrimination and 7493 individuals (86% White, 8% Black, 5% Latino) who responded to questions concerning everyday discrimination.

Measures

Outcomes

Depressive symptoms. The Center for Epidemiologic Studies Depression (CES-D) scale is a common measure of depressive symptomatology that has been used in a variety of population-based studies (Radloff, 1977). The HRS uses eight items from the CES-D, as opposed to the entire scale. Respondents are asked to think of the past week and indicate whether each of the feelings evaluated (e.g., depressed mood, loneliness) was true for them. Scores range between 0 and 8, with a higher score representing more depressive symptoms (Steffick, 2000).

Life satisfaction. This is a well-established measure of subjective well-being with extensive evidence of reliability and construct validity (Diener, Emmons, Larsen, & Griffin, 1985). The measure contains five items. Example questions are: 'in most ways my life is close to ideal' and 'I am satisfied with my life.' Scores range between 1 and 6, with a higher score representing greater life satisfaction.

Independent variables

Major experiences of lifetime discrimination. This is a six-item questionnaire concerning exposure to major life events that are perceived as unfair (Kessler et al., 1999; Williams et al., 1997). Example questions are: 'Been unfairly dismissed from a job' and 'unfairly denied a promotion.' In the case an event happened, respondents are asked to report the exact year it happened. Three variables were calculated: (1) presence of one or more event of major lifetime discrimination (yes/no); (2) number of events; and (3) mean number of years since the event occurred across all events experienced.

Everyday discrimination. This questionnaire evaluates the frequency with which each of five everyday discriminatory events has happened (Kessler et al., 1999; Williams et al., 1997). Example questions are: 'treated with less courtesy or respect than others' and 'received poorer services than others.' Response options range from 1 to 6, with a higher score indicating greater exposure. Two variables were calculated: (1) presence of one or more events of everyday discrimination (yes/no); and (2) mean frequency score across the five events. In the case an event had happened, respondents were asked to attribute the event to one or more possible causes, including: ancestry or national origin, gender, race, age, weight, physical disability, physical appearance, sexual orientation, and other.

Covariates

Age (<65, 65–75, >75), gender, education (0–12, >12), marital status (married/partnered vs. other),

income (<\$7500, \$7500–45,000, \$45,000–75,000, >\$75,000), and ethnicity (White, Latino, Black) were gathered based on self-report.

Analysis

All analyses were conducted using *STATA 10.0*. All analyses were stratified, clustered, and weighted using the *svy* command to account for the complex sampling design. Descriptive analyses were conducted to evaluate the rates of perceived exposure to major lifetime discrimination and everyday discrimination by ethnic status. In order to evaluate the relationship between perceived discrimination and mental health, regression analyses with depressive symptoms and life satisfaction as outcomes were conducted. Because depressive symptoms did not meet the normality assumption, Poisson regression analyses were conducted with depressive symptoms as an outcome and linear regression analyses were conducted with life satisfaction as an outcome. In the unadjusted models, the continuous variables of perceived major lifetime discrimination and everyday discrimination separately served as independent predictors. These models were subsequently adjusted for age, gender, education, income, marital status, and ethnicity. The interaction effects between ethnicity and perceived major lifetime discrimination and ethnicity and everyday discrimination were also examined. Next, the potential relationships were evaluated between the mean number of years for events of major lifetime discrimination and mental health (depressive symptoms and life satisfaction) and between the attribution of various causes to everyday discrimination and mental health. Only the most frequently endorsed attributions (e.g., ancestry or national origin, gender, race, age, and other) were evaluated as potential correlates of mental health in order to improve the interpretability of the results. These latter analyses were conducted only for those respondents who acknowledged experiencing either major lifetime discrimination or every day discrimination, respectively. For ease of interpretation, all continuous independent variables were centered on their mean.

Results

Table 1 summarizes the demographic characteristics of the sample. There were significant ethnic differences on all variables evaluated in this study. Relative to the other two ethnic groups, Whites reported significantly fewer depressive symptoms than Blacks or Latinos, and Blacks reported significantly lower life satisfaction than Whites or Latinos.

The prevalence of perceived exposure to major lifetime discrimination by ethnicity

Table 2 demonstrates the prevalence of perceived exposure to major lifetime discrimination by ethnicity.

Table 1. Demographic characteristics of the sample by ethnicity.

	Total sample (7493)	White (5953)	Latino (584)	Black (956)	p^a
Age					***
<65	2901(52.4%)	2224(51.1%)	269(62.3%)	408(59.4%)	
65–75	2604(25.4%)	2040(25.7%)	202(22.3%)	362(23.7%)	
>75	1983(22.1%)	1693(23.0%)	110(15.2%)	180(16.7%)	
Gender					***
Female	4408(54.2%)	3424(53.2%)	350(56.2%)	634(63.0%)	
Marital status					***
Married/partnered	5128(69.1%)	4242(71.3%)	396(66.4%)	490(48.0%)	
Education					***
>12	3295(48.9%)	2857(51.9%)	136(23.9%)	302(34.9%)	
Income					***
<=\$7500	5405(65.1%)	4292(65.0%)	417(64.5%)	696(66.6%)	
\$7500–45,000	1345(20.1%)	1011(19.1%)	137(28.6%)	197(23.9%)	
\$45,000–75,000	448(8.9%)	388(9.5%)	18(4.3%)	42(6.8%)	
>\$75,000	290(5.7%)	266(6.2%)	15(2.4%)	15(2.4%)	
Depressive symptoms (0–8)	1.37(0.02)	1.28(0.02)	2.11(0.18)	1.90(0.09)	*** (W < L; W < B)
Life satisfaction (1–6)	4.34(0.01)	4.38(0.01)	4.34(0.06)	3.95(0.04)	*** (W > B; L > B)

Notes: W, White; B, Black; L, Latino; and >/< indicates the direction of difference.

^aEthnic differences on categorical variables were examined using chi-squared analyses. ANOVAs followed by *post hoc* contrasts were conducted to examine differences on continuous variables.

*** indicates $p < 0.001$.

Table 2. Perceived exposure to major experiences of lifetime discrimination and everyday discrimination by ethnicity.

	Total sample (7488)	White (5957)	Latino (581)	Black (950)	p^a
Mean overall discrimination (0–6)	0.46(0.01)	0.43(0.01)	0.51(0.05)	0.84(0.05)	*** (B > L; B > W)
No discrimination	5399(70.0%)	4395(71.4%)	423(69.6%)	581(55.7%)	***
Years since event happened	20.6(0.40)	20.4(0.44)	19.5(1.80)	22.9(1.02)	
No everyday discrimination	2318(28.5%)	1817(28.1%)	228(35.8%)	274(27.4%)	**
Mean overall everyday discrimination (1–6)	1.71(0.01)	1.69(0.01)	1.68(0.04)	1.87(0.03)	*** (B > L; B > W)

Notes: W, White; B, Black; L, Latino; and >/< indicates the direction of difference.

^aEthnic differences on categorical variables were examined using chi-squared analyses. ANOVAs followed by *post hoc* contrasts were conducted to examine differences on continuous variables.

** and *** indicate $p < 0.01$ and $p < 0.001$.

Although 70% of the entire sample reported no exposure to major lifetime discrimination, only 55% of the Blacks acknowledged no such exposure. Blacks were also more likely to report a greater number of discriminatory events than the other two groups. With the exception of one item (been unfairly dismissed from a job), there were significant ethnic differences on all items, with all events being more frequently endorsed by Blacks. Years since the discriminatory events happened did not differ significantly across the three ethnic groups, with an average number of years since the event being 20.6 (SE = 0.40; SE, standard error) in the overall sample.

The prevalence of perceived exposure to everyday discrimination by ethnicity

Relative to White and Black older adults (71.8% and 72.5%, respectively), Latinos (64.1%) were significantly less likely to acknowledge everyday discrimination.

The frequency of overall everyday discrimination was significantly higher in Blacks (Mean [SE] = 1.87[0.03]) relative to Latinos (Mean[SE] = 1.68[0.04]) and Whites (Mean[SE] = 1.69[0.01]). There were significant ethnic group differences on all five items evaluating everyday discrimination, with Blacks reporting being treated with less courtesy, receiving poorer services, and having people act as if they are not smart at higher frequencies than the other two groups. The groups also differed on the latter two items concerning everyday discrimination, but direction of differences was not consistent with a particular ethnic group (Table 2).

For the entire sample, the most common attributions used to explain everyday discrimination were age (30.2%), other (15.0%), and gender (13.4%). This same pattern was also evident for Whites (age: 31.2%, other: 16.0%, and gender: 13.6%). In contrast, ethnic minorities attributed different causes to everyday discrimination. For Latinos, the most common attributions were age (25.7%), race (18.6%), and ancestry or national origin (18.5%), whereas for Blacks, the

most common attributions were race (49.0%), age (23.1%), and ancestry or national origin (17.5%).

Perceived exposure to major lifetime discrimination as a correlate of mental health

As given in Table 3, perceived major lifetime discrimination was a significant correlate of both depressive symptoms and life satisfaction in both unadjusted and adjusted models.

There were significant interaction effects between ethnicity and major lifetime discrimination for both depressive symptoms and life satisfaction. In both cases, there was a significant interaction effect between major lifetime discrimination and Black ethnicity for depression and life satisfaction. For Whites and Latinos, major lifetime discrimination was associated with depressive symptoms ($\beta = 0.20$ and $\beta = 0.15$, respectively), but this relationship was not significant for Blacks ($\beta = 0.05$). Similarly, the relationship between life satisfaction and perceived major lifetime discrimination was not significant for Blacks ($\beta = -0.06$) but was significant for Whites ($\beta = -0.22$).

Perceived exposure to everyday discrimination as a correlate of mental health

Table 3 also illustrates findings for everyday discrimination. In both unadjusted and adjusted models, perceived everyday discrimination was a significant correlate of both depressive symptoms and life satisfaction. For depressive symptoms as an outcome, there was a significant interaction effect between everyday discrimination and ethnicity for both Blacks and Latinos compared to Whites. Relative to Whites ($\beta = 0.34$), the relationship between perceived exposure to everyday discrimination and depressive symptoms was lower in Latinos ($\beta = 0.15$) and Blacks ($\beta = 0.16$), although it was significant in all groups.

With regard to life satisfaction, there was a significant interaction effect between ethnicity and everyday discrimination between Whites and Blacks. The relationship of everyday discrimination and life satisfaction was significant for both groups but was less pronounced in Blacks ($\beta = -0.25$) relative to Whites ($\beta = -0.38$).

Years since exposure to major lifetime discrimination as a correlate of mental health

As given in Table 3, years since exposure to major lifetime discrimination were not related to depressive symptoms and there was no interaction between years since exposure to major lifetime discrimination and ethnicity. Although years since exposure to major lifetime discrimination were associated with life satisfaction in the unadjusted as well as the adjusted models, this association was very low; for unadjusted, $\beta = 0.01$ (SE = 0.002) and for adjusted, $\beta = 0.001$

(SE = 0.002). There was an interaction effect between years since exposure to major lifetime discrimination with regard to life satisfaction for Latinos ($\beta = -0.008$, SE = 0.009) compared to Whites ($\beta = 0.009$, SE = 0.003), such that greater number of years was associated with higher depressive symptoms for Whites but not significant for Latinos (Table 3).

The attribution of everyday discrimination as a correlate of mental health

In the unadjusted model, the attribution of everyday discrimination to race ($\beta = 0.25^{***}$, SE = 0.05) or age ($\beta = 0.08^*$, SE = 0.04) was associated with greater depressive symptoms, whereas the attribution of everyday discrimination to gender ($\beta = -0.09^*$, SE = 0.04) and other unspecified reasons ($\beta = -0.19^{**}$, SE = 0.06) was associated with lower levels of depressive symptoms. In the adjusted model, only the attribution to age ($\beta = 0.14^{***}$, SE = 0.05) remained a significant correlate of depressive symptoms. There were no significant interaction effects. As for life satisfaction, the attribution of everyday discrimination to race ($\beta = -0.37^{***}$, SE = 0.06), age ($\beta = -0.26^{***}$, SE = 0.04) or other unspecified reasons ($\beta = -0.10^*$, SE = 0.05) was associated with lower life satisfaction in the unadjusted model. In the adjusted model, the attribution to age ($\beta = -0.27^{***}$, SE = 0.04) or other unspecified reasons ($\beta = -0.10^*$, SE = 0.04) was associated with lower life satisfaction. There were no significant interaction effects.

Discussion

The study shows that the rates of perceived major lifetime discrimination are substantially higher in Blacks relative to Whites. Interestingly, the rates reported by Latinos are closer to those reported by Whites. Relative to Blacks and Whites, Latinos were the least likely to acknowledge any everyday discrimination. Blacks reported experiencing everyday discrimination at higher frequencies than the other two ethnic groups. The present findings suggest that even though both Black and Latino older adults represent ethnic minority groups, perceived exposure to discrimination in Latinos is more consistent with the experiences of Whites than those of Blacks.

Consistent with the expectation that lower levels of exposure to discrimination would be associated with better mental health, Whites reported the lowest levels of depressive symptoms and the highest levels of life satisfaction. As expected, greater perceived exposure to major lifetime discrimination and everyday discrimination were associated with more depressive symptoms and lower life satisfaction. Nonetheless, this association was only mild in the case of major lifetime discrimination and moderate in the case of everyday discrimination, suggesting that discrimination may

Table 3. Major experiences of lifetime discrimination, everyday discrimination, and mean years since major lifetime discrimination as correlates of depressive symptoms and life satisfaction across the three ethnic groups.

	Major lifetime discrimination			Everyday discrimination			Mean years since major lifetime discrimination		
	β (SE)	p	F	β (SE)	P	F	β (SE)	p	F
Depressive symptoms									
Unadjusted	0.16 (0.01)	***	$F(1, 56) = 86.9, p < 0.001$	0.29 (0.02)	***	$F(1, 56) = 167.6, p < 0.001$	-0.003 (0.002)		$F(1, 55) = 1.66, p = 0.20$
Adjusted ^a	0.16 (0.01)	***	$F(11, 46) = 64.1, p < 0.001$	0.30 (0.02)	***	$F(11, 46) = 81.8, p < 0.001$	-0.004 (0.002)		$F(11, 45) = 11.4, p < 0.001$
Interaction by ethnicity ^b			$F(13, 44) = 60.8, p < 0.001$			$F(13, 44) = 71.3, p < 0.001$			$F(13, 43) = 9.79, p < 0.001$
Latino	-0.05 (0.05)			-0.16 (0.05)	**		-0.004 (0.008)		
Black	-0.16 (0.04)	***		-0.16 (0.05)	**		-0.001 (0.005)		
Adjusted by ethnic group									
White	0.20 (0.02)	***	$F(9, 47) = 62.2, p < 0.001$	0.34 (0.02)	***	$F(9, 47) = 73.8, p < 0.001$	-0.003 (0.002)		$F(9, 46) = 9.7, p < 0.001$
Latino	0.15 (0.04)	**	$F(9, 24) = 9.8, p < 0.001$	0.15 (0.05)	*	$F(9, 24) = 13.0, p < 0.001$	-0.008 (0.006)		$F(8, 10) = 5.1, p = 0.009$
Black	0.05 (0.03)		$F(9, 35) = 9.01, p < 0.001$	0.16 (0.05)	**	$F(9, 35) = 11.7, p < 0.001$	-0.007 (0.005)		$F(9, 23) = 424.4, p < 0.001$
Life satisfaction									
Unadjusted	-0.22 (0.02)	***	$F(1, 56) = 97.2, p < 0.001$	-0.40 (0.02)	***	$F(1, 56) = 192.1, p < 0.001$	0.01 (0.002)	***	$F(1, 55) = 18.7, p < 0.001$
Adjusted ^c	-0.18 (0.02)	***	$F(11, 46) = 36.7, p < 0.001$	-0.37 (0.02)	***	$F(11, 46) = 58.7, p < 0.001$	0.009 (0.002)	**	$F(11, 45) = 13.2, p < 0.001$
Interaction by ethnicity ^b			$F(13, 44) = 30.8, p < 0.001$			$F(13, 44) = 49.8, p < 0.001$			$F(13, 43) = 13.7, p < 0.001$
Latino	0.15 (0.08)			0.02 (0.07)			-0.01 (0.009)		
Black	0.13 (0.05)	*		0.13 (0.05)	*		0.003 (0.005)		
Adjusted by ethnic group									
White	-0.22 (0.02)	***	$F(9, 47) = 37.5, p < 0.001$	-0.38 (0.03)	<0.001	$F(9, 47) = 58.1, p < 0.001$	0.009 (0.003)	0.002	$F(9, 46) = 13.6, p < 0.001$
Latino	-0.08 (0.08)		$F(9, 24) = 3.8, p = 0.003$	-0.35 (0.07)	<0.001	$F(9, 24) = 9.7, p < 0.001$	-0.008 (0.009)	0.36	$F(6, 7) = 0.5, p = 0.03$
Black	-0.06 (0.05)		$F(9, 35) = 3.2, p = 0.005$	-0.25 (0.05)	<0.001	$F(9, 35) = 7.3, p < 0.001$	0.01 (0.007)	0.07	$F(9, 23) = 7.7, p < 0.001$

Notes: ^aAdjusted for age, gender, education, income, marital status, and ethnicity. Ethnicity is omitted from the model when separate analyses by ethnic group are conducted. Major lifetime discrimination and everyday discrimination are entered separately; ^badjusted for age, gender, education, income, marital status, ethnicity, and the interactions between ethnicity and major lifetime discrimination and ethnicity and everyday discrimination; and ^cadjusted for age, gender, education, income, marital status, and ethnicity. Both major lifetime discrimination and everyday discrimination are entered simultaneously into the equation. Ethnicity is omitted from the model when separate analyses by ethnic group are conducted. *, **, and *** indicate $p < 0.05, p < 0.01, \text{ and } p < 0.001$, respectively.

play a lesser role in the mental health status of older adults as evaluated in this study.

Moreover, the relationship between discrimination and mental health varied according to the specific ethnic group. Results show that perceived major lifetime discrimination is a significant correlate of depressive symptoms in Whites and Latinos. In the case of life satisfaction, perceived major lifetime discrimination is a correlate only in Whites. A similar pattern was also evident in the case of perceived exposure to everyday discrimination. Although everyday discrimination was a significant correlate of depressive symptoms across all ethnic groups, the coefficient was smaller in the case of Black and Latino older adults relative to Whites. In the case of life satisfaction, the relationship between everyday discrimination and life satisfaction was lower in Blacks than in Whites and Latinos, but still significant for all three groups.

These findings could be explained by the fact that Black older adults are already accustomed to the effects of discrimination, whereas Whites and to a lesser degree Latinos, who are less likely to experience discrimination throughout their life, are more likely to be affected by it at old age. It is also possible, however, that in later life, research studies include the strongest most resilient older adults, who have learned to cope with discrimination, whereas those most affected by it are too impaired to participate in such a study. Such a selection bias might be supported by prior research demonstrating a relationship between major life discrimination and mortality in later life (Barnes et al., 2008). In addition, the retrospective nature of the questions concerning discrimination might affect their utility as markers of discrimination. It also is possible that other indicators of mental health not evaluated in this study are more affected by discrimination. Finally, it is possible that social and cultural resources, such as community support and religious beliefs attenuate the relationship between discrimination and mental health specifically among ethnic minorities.

These findings are in contrast with past research that found a substantial role of discrimination in the mental health of ethnic minorities and Whites alike (Williams, Neighbors, & Jackson, 2003). Yet, findings are in agreement with several other studies that found only limited correlation between discrimination and mental health (Kessler et al., 1999) and even a lesser correlation among ethnic minorities than whites (Williams et al., 1997). One possible explanation that may account for the discrepancy is the diverse nature of past research on discrimination (Williams et al., 2003). Whereas some studies used a single item for the assessment of discrimination, others used much more elaborated measures. Further, some specifically evaluated racism, whereas others, similar to this study, assessed discrimination in a much broader way and evaluated additional bases for discrimination, such as age, gender, or weight.

Unexpectedly, there were no ethnic differences in time elapsed since major lifetime discrimination, suggesting that all ethnic groups experienced discrimination throughout their lives and not only at old age. Years since exposure to major lifetime discrimination were associated with life satisfaction, but not with depressive symptoms. Yet, even in the case of life satisfaction, this associate was low; indicating that whether or not one had experienced major lifetime discrimination is of greater importance than the number of years elapsed since these experiences had taken place.

As expected, race and ancestry as causal attributes of everyday discrimination were more common in Blacks and Latinos than in Whites. In contrast, Whites were most likely to attribute discrimination to age, gender, and unspecified reasons. It is also important to note that the attribution of everyday discrimination to age is much higher in this study relative to past research concerning younger adults (Kessler et al., 1999), suggesting that perceived age discrimination is more prevalent in older age. Nonetheless, it is still unclear whether older adults experience more everyday discrimination due to old age or are just more likely to attribute discrimination to old age as they get older. The study also shows that the attribution of everyday discrimination to age has the most consistent association with the two mental health indicators evaluated in this study, suggesting that older adults might be particularly negatively affected by ageism. Therefore, programs aimed to educate the public and to prevent ageism might improve older adults' mental health.

This study has several limitations that should be noted. This is a cross-sectional design that does not allow for inferences about direction of influence. Related to this is the fact that discrimination is a subjective construct which might be affected by one's mental health and recall bias. As shown in this study, there is substantial variability across ethnic groups. Hence, further research concerning other ethnic minority groups may enhance our understanding of the effects of discrimination. Evaluating factors associated with within group differences is also recommended as acculturation, country of origin and year of immigration likely play major roles in one's experiences of discrimination. Related to this is the fact that the study neglected to take into consideration cultural and social resources that might be particularly beneficial for ethnic minorities. In addition, the sample for Latinos was relatively small and may have included more acculturated individuals who speak English. This may have limited the ability to detect significant ethnic differences in the association of discrimination and mental health. This also precluded the examination of potential differences for different Latino groups in the United States, such as Mexican, Cuban, Puerto Rican, or Central or South American. The subjective nature of discrimination should also be acknowledged. It is possible that at least some of the differences identified reflect differences in the interpretation of experiences

or different report styles. Finally, as already noted, one cannot underestimate the possibility of a selection bias especially with regard to such a sensitive topic. It is highly possible that those most affected by discrimination are reluctant to participate in national studies, such as the HRS.

Nonetheless, this is one of very few studies to evaluate the experience of discrimination in older adults. Overall, results are consistent with the findings obtained in younger cohorts, suggesting that the experience of discrimination and its impact are quite comparable across different age groups. This study demonstrates that White and Latino older adults are more similar in their reports of discrimination, whereas Blacks report greater exposure to discrimination. The relationships of discrimination to depressive symptoms or life satisfaction are not strong, however, particularly for Black older adults. Perhaps, these older adults have developed coping strategies to adjust to past discrimination. Also, major lifetime discrimination occurred at an average of 20 years ago for participants, so their current depressive symptoms and life satisfaction are likely more strongly associated with more proximal factors, such as health status or social networks.

This study also shows that number of discriminatory experiences is more important than the time the discriminatory events took place. Similarly, although causal attributions of everyday discrimination were associated with one's mental health, associations were weak and somewhat inconsistent, suggesting that merely experiencing everyday discrimination is more important than the attribution given to it. The one exception was the attribution of discrimination to age, which was consistently associated with more depressive symptoms and less life satisfaction in this sample of older adults. Given the present findings, it is important to continue and examine the effects of discrimination on other health and mental health indicators. It may also prove useful to evaluate the cumulative effects of discrimination in different ways that may capture more closely its negative consequences. Major lifetime discrimination and everyday discrimination likely influence individuals in varied ways, depending on a variety of factors, such as the outcomes of the discriminatory event (e.g., difficulty finding another job), degree of social support, or degree to which individuals internalize the discriminatory beliefs. In addition to efforts to reduce discrimination, additional research with resilient older adults who have overcome discrimination may be valuable to learn ways in which others can overcome discrimination, such as older adults who face age discrimination.

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References

- Barnes, L.L., de Leon, C.F.M., Lewis, T.T., Bienias, J.L., Wilson, R.S., & Evans, D.A. (2008). Perceived discrimination and mortality in a population-based study of older adults. *American Journal of Public Health, 98*, 1241–1247.
- Barnes, L.L., de Leon, C.F.M., Wilson, R.S., Bienias, J.L., Bennett, D.A., & Evans, D.A. (2004). Racial differences in perceived discrimination in a community population of older Blacks and Whites. *Journal of Aging and Health, 16*, 315–337.
- Bhui, K., Stansfeld, S., McKenzie, K., Karlsen, S., Nazroo, J., & Weich, S. (2005). Racial/ethnic discrimination and common mental disorders among workers: Findings from the EMPIRIC study of ethnic minority groups in the United Kingdom. *American Journal of Public Health, 95*, 496–501.
- Budget. (1997, October 30). *Revisions to the standards for the classification of federal data on race and ethnicity*. Retrieved from <http://www.whitehouse.gov/omb/rewrite/fedreg/ombdir15.html>
- Diener, E., Emmons, R.A., Larsen, R.J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*, 71–75.
- Kessler, R.C., Mickelson, K.D., & Williams, D.R. (1999). The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *Journal of Health and Social Behavior, 40*, 208–230.
- Lewis, T.T., Barnes, L.L., Bienias, J.L., Lackland, D.T., Evans, D.A., & Mendes de Leon, C.F. (2009). Perceived discrimination and blood pressure in older African American and white adults. *Journal of Gerontology A: Biological Sciences and Medical Sciences, 64A*, 1002–1008.
- Peters, R.M. (2004). Racism and hypertension among African Americans. *Western Journal of Nursing Research, 26*, 612–631.
- Radloff, L.S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401.
- Steffick, D.E. (2000). *Documentation of affective functioning measures in the Health and Retirement Study*. Ann Arbor: HRS Health Working Group.
- Williams, D.R., Neighbors, H.W., & Jackson, J.S. (2003). Racial/ethnic discrimination and health: Findings from community studies. *American Journal of Public Health, 93*, 200–208.
- Williams, D.R., Yan, Y., Jackson, J.S., & Anderson, N.B. (1997). Racial differences in physical and mental health: Socio-economic status, stress and discrimination. *Journal of Health Psychology, 2*, 335–351.