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**FROM THE ALZHEIMER'S ASSOCIATION INTERNATIONAL CONFERENCE 2022****EXPERIENCES OF RACISM ASSOCIATED WITH  
POOR MEMORY, INCREASED COGNITIVE DECLINE**

**SAN DIEGO, AUGUST 1, 2022** — Experiences of structural, interpersonal and institutional racism are associated with lower memory scores and worse cognition in midlife and old age, especially among Black individuals, according to studies reported today at the [Alzheimer's Association International Conference® \(AAIC®\) 2022](#) in San Diego and virtually.

Among the key findings reported at AAIC 2022 are:

- In a study of nearly 1,000 middle-aged community-dwelling adults (55% Latinx; 23% Black; 19% White), exposure to interpersonal and institutional racism was associated with lower memory scores, and these associations were driven by Black individuals. Experiences of structural racism were associated with lower episodic memory among all racial and ethnic groups that were included in the study.
- In a study of 445 Asian, Black, Latino, White and multiracial people age 90 and above, individuals who experienced wide-ranging discrimination throughout life had lower semantic memory in late life compared to those who experienced little to no discrimination.

“In order to achieve health equity — as a step toward complete inclusion — individuals and society must identify and reduce racism and other forms of discrimination,” said Carl V. Hill, Ph.D., MPH, chief diversity, equity and inclusion officer at the Alzheimer's Association. “We must create a society in which the underserved, disproportionately affected and underrepresented are safe, cared for and valued.”

According to the Alzheimer's Association [2022 Alzheimer's Disease Facts and Figures](#) report, Blacks are about twice as likely and Hispanic/Latinos are about one and one-half times as likely to have Alzheimer's or other dementias.

The various types and experiences of structural racism and discrimination contribute to systemic inequities, including: lower socioeconomic status; lower quality early life education; and less access to healthy food and proper health care. Individually and cumulatively, these factors impact brain health over the lifecourse in Black/African American, Hispanic/Latino and other communities.

“These systemic disparities are related to less access to important health-protecting resources such as high-quality care and social networks that provide valuable health information and support,” said Rev. Miriam J. Burnett, M.D., MDiv, MPH, medical director, African Methodist Episcopal Church International Health Commission.

“The consistent and pervasive lack of resources, as well as social and environmental factors, lead to disparities in other health outcomes such as cardiovascular disease and diabetes, which increase the risk for Alzheimer's

and other dementias,” said Adriana Perez, Ph.D., CRNP, ANP-BC, FAAN, FGSA, assistant professor of nursing at University of Pennsylvania School of Nursing and member of the National Association of Hispanic Nurses.

### **Multilevel racism associated with lower memory scores**

Research suggests interpersonal and structural racism are contributors to racial and ethnic disparities in cognitive aging. However, there’s little understanding of how multilevel racism influences cognition throughout the life course. To address this gap in knowledge, Dominika Šeblová, Ph.D., postdoctoral researcher in the Gertrude H. Sergievsky Center at Columbia University Irving Medical Center, in collaboration with an interdisciplinary team of researchers with expertise in health equity, assessed experiences of interpersonal, institutional and structural racism among 942 middle-aged adults (mean age=55; 64% women; 55% Latinx; 23% non-Latinx Black; 19% non-Latinx White).

Black participants were most exposed to racism at all levels. They were more likely to grow up and live in segregated areas that are known to be resource-deprived due to institutional disinvestment in Black neighborhoods. Black participants experienced on average six civil rights violations in their lifetime and were exposed to interpersonal discrimination at least once per week. These exposures were associated with lower memory scores, and the magnitude of the association corresponded to 1-3 years of chronological age. Structural racism was associated with lower episodic memory in the full sample.

“Chronic exposure to racism and interpersonal discrimination among marginalized communities leads to stress that affects the body and influences physiological health, and likely contributes to the development of cognitive decline,” said Jennifer Manly, Ph.D., professor of neuropsychology at Columbia University Irving Medical Center and the senior author of this work. “Overall, our findings indicate that racism impacts brain health and contributes to the unfair burden of Alzheimer’s disease in marginalized groups.”

### **Poorer cognition among oldest old is linked to experiences of discrimination**

Discrimination is a fundamental cause of health inequities. However, it is unknown whether discrimination contributes to disparities in cognitive aging among the oldest old, a group sometimes referred to as super agers. To answer this question, Kristen George, Ph.D., assistant professor of epidemiology in the Department of Public Health Sciences at University of California, Davis and colleagues, examined the relationship of lifetime experiences of major discrimination with cognitive function and decline among a diverse cohort of Asian, Black, White, Latino and multiracial participants of the Life After 90 (LA90) Study.

Among 468 participants (20.5% Asian; 21.8% Black; 14.5% Latino; 35.7% White; 7.5% multiracial), the average age at enrollment was 93. Participants completed three cognitive assessments over an average of 1.2 years. Participants reported experiences of major lifetime discrimination via questionnaire and were grouped based on their responses.

- Group 1 reported workplace discrimination (i.e., unfairly fired, not hired, not given a promotion) and was comprised of mostly White men.
- Group 2 reported little to no discrimination over their lifetime and consisted of White women and Asian, Black and Latino older adults.
- Group 3 reported experiencing discrimination across several domains (workplace, financial, housing, etc.) and all participants of this group were non-White.

The researchers found that participants in Group 1 (workplace discrimination) had higher levels of baseline cognition in domains of executive function and semantic memory compared to Group 2 (no discrimination). Group 3 (wide-ranging discrimination) had worse semantic memory at baseline compared to Group 2. Across the groups, there were no differences in cognitive decline over time.

“These findings highlight that among the oldest old, inequities in cognitive function persist after accounting for experiences of major lifetime discrimination,” said George. “Despite the incredible longevity of this group, discrimination has an indelible impact on cognitive health, and oldest old adults still stand to benefit from efforts to eliminate and redress health disparities.”

### **About the Alzheimer’s Association International Conference® (AAIC®)**

The Alzheimer’s Association International Conference (AAIC) is the world’s largest gathering of researchers from around the world focused on Alzheimer’s and other dementias. As a part of the Alzheimer’s Association’s research program, AAIC serves as a catalyst for generating new knowledge about dementia and fostering a vital, collegial research community.

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AAIC 2022 newsroom: [www.alz.org/aaic/pressroom.asp](http://www.alz.org/aaic/pressroom.asp)

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### **About the Alzheimer’s Association®**

The Alzheimer’s Association is a worldwide voluntary health organization dedicated to Alzheimer’s care, support and research. Our mission is to lead the way to end Alzheimer’s and all other dementia — by accelerating global research, driving risk reduction and early detection, and maximizing quality care and support. Our vision is a world without Alzheimer’s and all other dementia®. Visit [alz.org](http://alz.org) or call 800.272.3900.

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- Dominika Seblova, Ph.D., et al. Relationship of daily, institutional and structural racism with cognition in ethnically/racially diverse middle-age Americans (Funders: Alzheimer’s Association; National Institute on Aging)
- Kristen George, Ph.D., MPH, et al. Experiences of Discrimination on Cognitive Function and Aging among the Oldest Old: LifeAfter90 (LA90) Study (Funder: National Institute on Aging)

\*\*\* AAIC 2022 news releases may contain updated data that does not match what is reported in the following abstracts.

**Proposal ID:** 67224

**Title:** Relationship of daily, institutional and structural racism with cognition in ethnically/racially diverse middle-age Americans

**Background:** Racism is a social determinant of health that operates at multiple levels — interpersonal, institutional, structural — producing stress and limiting access to resources that have dire biopsychosocial effects for historically marginalized communities. Research on older adults suggests interpersonal and structural racism, separately, are associated with worse cognition and may be an underlying reason for racial/ethnic disparities in cognitive aging. An evidence gap remains on how multilevel racism influences cognition throughout the life-course.

**Method:** We assessed 942 middle-aged community-dwelling adults (mean age=55, SD=11; 64% women; 19% non-Latinx White; 23% non-Latinx Black; 55% Latinx). Daily interpersonal racism was ascertained by the Everyday Discrimination (ED) scale, institutional racism by the Major Discrimination (MD) Scale, and structural racism in early life was measured by residential segregation of the census block group in which parents of our respondents lived. Our outcomes were derived from a neuropsychological evaluation with the Digit Span assessing attention and working memory, and delayed recall from the Selective Reminding Test capturing episodic memory. Two fluency measures (animal and letter) were also studied. The relationship between multilevel racism indicators and cognition was estimated using age-adjusted linear regression models. Additional models were stratified by racialized/ethnic group and added education as a covariate.

**Result:** Exposure to multilevel racism varied across racialized/ethnic group. Non-Latinx Black respondents scored highest on interpersonal racism, second highest on institutional racism, and were more likely to grow up in segregated residential areas with higher proportion of other Black residents. Exposure to interpersonal (Figure A) and institutional racism (Figure B) was associated with lower memory scores and these associations were driven by non-Latinx Black respondents. Structural racism was associated with lower episodic memory in the full sample.

**Conclusion:** Our findings indicate that multilevel racism related to cognition and due to higher exposure among marginalized groups may be a substantial driver of racial/ethnic disparities in cognitive health. In future, additive and multiplicative effects of our exposures will be examined.

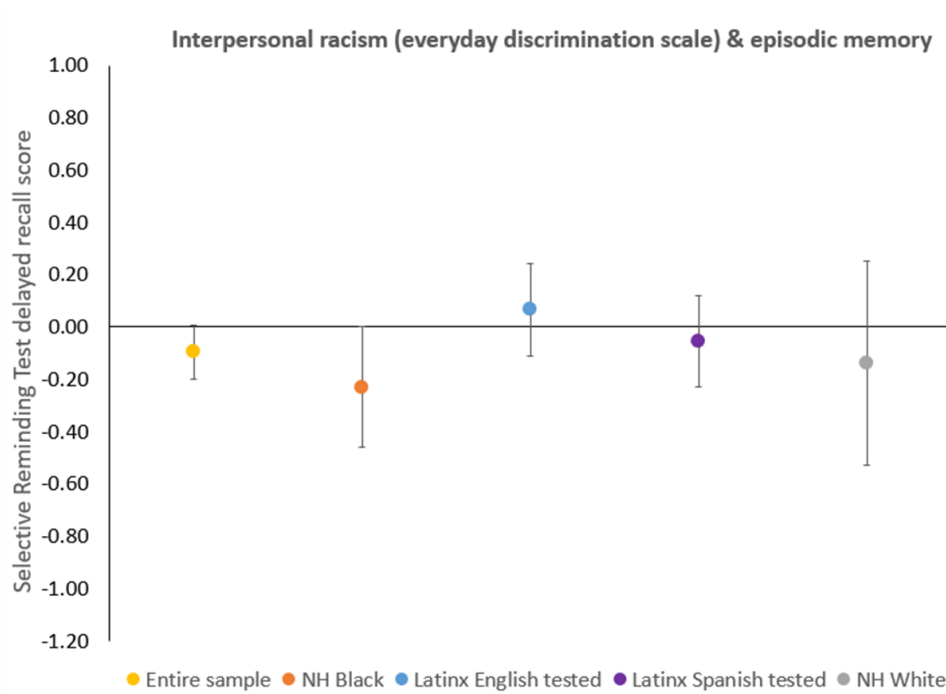
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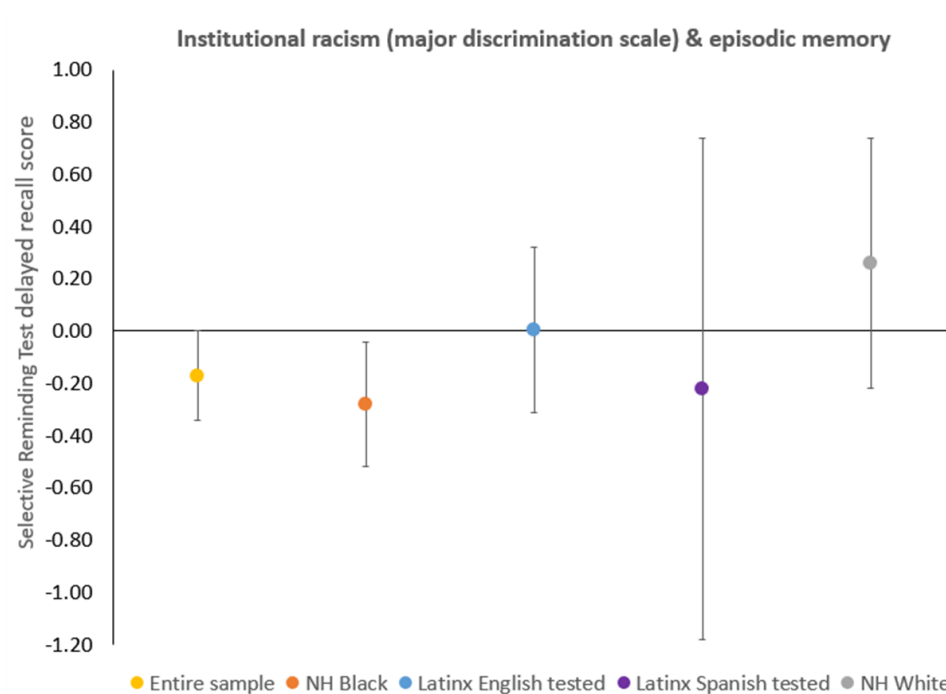
Columbia University Irving Medical Center, New York, United States

**Panel figure:** Beta-estimates and related confidence intervals for the relationship of interpersonal (A) and institutional (B) racism with episodic memory derived from overall and race/ethnicity stratified models, adjusted for age.

**A.**



**B.**



**Proposal ID:** 67244

**Title:** Experiences of Discrimination on Cognitive Function and Aging among the Oldest Old: *LifeAfter90* (LA90) Study

**Background:** Discrimination is a primary cause of health inequities, and racial/ethnic disparities in dementia are well documented. However, it is unclear whether longevity into old age indicates overcoming discriminatory experiences. Using data from the *LifeAfter90* (LA90) Study, we examined the impact of major lifetime discrimination on cognitive function and decline in those 90+.

**Method:** LA90 enrolled Asian, Black, Latino, white, and multi-racial Kaiser Permanente Northern California members who were followed for incident dementia and aged 90+. Discrimination was measured using the Major Experiences of Discrimination Scale. Latent class analysis identified three groups based on responses to the 10-item scale, gender, and race/ethnicity. Executive function, verbal episodic memory, and semantic memory were assessed every six months with the Spanish and English Neuropsychological Assessment Scales and scores were z-standardized to baseline. Linear mixed models with random intercepts and slopes associated latent classes of discrimination with cognitive change over 3 waves (mean=1.2 years). Models adjusted for age, education, cognitive status (normal/mild cognitive impairment- accounting for recall bias), practice effects, follow-up time, and class\*time interactions.

**Result:** Our analytic sample of 445 participants had a mean age of 92.7(SD=2.3) (Table 1). Class-1 included mostly white men who reported workplace discrimination and had an average of 2 major discrimination experiences. Class-2 included white women and non-white participants who reported little/no discrimination averaging 0 experiences. Class-3 included all non-white participants who reported a mean of 4 discrimination experiences. At baseline, using Class-2 as reference, participants in Class-1 had significantly better executive function ( $\beta$ (95% CI): 0.28(0.03, 0.52) while Class-3 did not differ (Table 2). Baseline semantic memory was significantly better for Class-1 ( $\beta$ (95% CI): 0.33(0.07, 0.58)) and significantly worse for Class-3 ( $\beta$ (95% CI): -0.24(-0.48, -0.00)) compared to Class-2. We found no class differences in baseline verbal episodic memory. Cognition declined over time across all three cognitive domains ( $\beta$  range: -0.31 to -0.46), but rate of change did not differ significantly by latent class (Table 3).

**Conclusion:** Among the oldest old, inequalities in cognition persist after accounting for experiences of lifetime discrimination. Despite participants' incredible longevity, experiences of discrimination have an indelible association with cognitive health.

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**Table 1.** Baseline characteristics stratified by latent class

	Overall	Class 1	Class 2	Class 3
		Mostly White Men - Workplace Discrimination	White Women and Non-White Older Adults - Little/No Discrimination	Non-White Older Adults - Discrimination
	<b>n=445</b>	<b>n=51</b>	<b>n=342</b>	<b>n=52</b>
Age, mean years (SD)	92.7 (2.3)	93.0 (2.1)	92.7 (2.3)	92.6 (2.4)
Men, N (%)	164 (36.9)	33 (64.7)	106 (31.0)	25 (48.1)
Race, N (%)				
Asian	88 (19.8)	4 (7.8)	72 (21.1)	12 (23.1)
Black	97 (21.8)	6 (11.8)	58 (17.0)	33 (63.5)
Latino	63 (14.2)	6 (11.8)	55 (16.1)	2 (3.9)
White	162 (36.4)	34 (66.7)	128 (37.4)	0 (0)
Other	35 (7.9)	1 (2.0)	29 (8.5)	5 (9.6)
Education, N (%)				
Less than H.S.	40 (9.0)	3 (5.9)	35 (10.2)	2 (3.9)
H.S. Graduate	79 (17.8)	3 (5.9)	70 (20.5)	6 (11.5)
Some College/Trade	161 (36.2)	16 (31.4)	121 (35.4)	24 (46.2)
College Graduate	76 (17.1)	9 (17.7)	54 (15.8)	13 (25.0)
Graduate School	89 (20.0)	20 (39.2)	62 (18.1)	7 (13.5)
Lifetime Discrimination Composite, Mean (SD)	0.8 (1.4)	1.8 (0.9)	0.2 (0.5)	3.7 (1.7)
Cognitive Impairment, N (%)	173 (35.7)	17 (33.3)	136 (40.5)	20 (38.5)

**Table 2.** Predicted mean difference in baseline SENAS Z-scores from linear mixed models stratified by latent class

	Class 1	Class 2	Class 3
	Mostly White Male - Workplace Discrimination	White Women and Non-White Older Adults - Little/No Discrimination	Non-White Older Adults - Discrimination
<b>Executive Function</b>			
Model 1	0.44 (0.18, 0.70)	Ref	-0.07 (-0.32, 0.18)
Model 2	0.32 (0.07, 0.57)	Ref	-0.15 (-0.39, 0.09)
Model 3	0.28 (0.03, 0.52)	Ref	-0.12 (-0.35, 0.12)
<b>Verbal Episodic Memory</b>			
Model 1	-0.03 (-0.29, 0.23)	Ref	0.04 (-0.22, 0.29)
Model 2	-0.03 (-0.30, 0.23)	Ref	0.01 (-0.25, 0.26)
Model 3	-0.04 (-0.32, 0.23)	Ref	0.03 (-0.24, 0.29)
<b>Semantic Memory</b>			
Model 1	0.39 (0.12, 0.66)	Ref	-0.19 (-0.45, 0.06)
Model 2	0.31 (0.04, 0.57)	Ref	-0.26 (-0.51, -0.00)
Model 3	0.33 (0.07, 0.58)	Ref	-0.24 (-0.48, -0.00)

Model 1 adjusted for age, practice effects, and follow-up time with random intercepts and slopes

Model 2 adjusted for Model 1 + education

Model 3 adjusted for Model 2 + cognitive status

**Table 3.** Predicted mean differences in slope of SENAS Z-scores from linear mixed models stratified by latent class

	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>
	<b>Mostly White Male - Workplace Discrimination</b>	<b>White Women and Non-White Older Adults - Little/No Discrimination</b>	<b>Non-White Older Adults - Discrimination</b>
<b>Executive Function</b>			
Model 1	-0.02 (-0.11, 0.06)	Ref	0.02 (-0.06, 0.10)
Model 2	-0.02 (-0.11, 0.06)	Ref	0.02 (-0.06, 0.10)
Model 3	0.00 (-0.14, 0.14)	Ref	-0.06 (-0.19, 0.08)
<b>Verbal Episodic Memory</b>			
Model 1	0.05 (-0.08, 0.18)	Ref	0.08 (-0.05, 0.20)
Model 2	-0.04 (-0.08, 0.17)	Ref	0.00 (-0.05, 0.20)
Model 3	-0.03 (-0.24, 0.17)	Ref	0.01 (-0.18, 0.19)
<b>Semantic Memory</b>			
Model 1	-0.01 (-0.11, 0.13)	Ref	-0.07 (-0.20, 0.06)
Model 2	0.01 (-0.11, 0.13)	Ref	-0.07 (-0.20, 0.06)
Model 3	-0.10 (-0.29, 0.09)	Ref	-0.15 (-0.32, 0.02)

Model 1 adjusted for age, practice effects, and follow-up time with random intercepts and slopes

Model 2 adjusted for Model 1 + education

Model 3 adjusted for Model 2 + cognitive status