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Racial discrimination and mental health in the context of anti-Asian xenophobia: An intersecting approach of race, ethnicity, nativity, and socioeconomic status

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Abstract

The COVID-19 pandemic, polarized politics, and heightened stigma and discrimination are salient drivers for negative mental health outcomes, particularly among marginalized racial and ethnic minoritized groups. Intersectionality of race, ethnicity, foreign-born status, and educational attainment may distinctively shape an individual's experience of discrimination and mental health during such unprecedented time. The present study examines the differential associations of racial discrimination and mental health based on an individual's race, ethnicity, foreign-born status, and educational attainment during the COVID-19 pandemic. Analyses were based on a nationally representative sample of U.S. adults collected between October and November 2021 (n = 6276). We utilized multivariable linear regressions to identify the multiplicative effects of race, ethnic, foreign-born status and self-reported racial discrimination on mental health, stratified by educational attainment. Among individuals with lower educational attainment, associations between racial discrimination and poor mental health were stronger among Asians (US-born: β

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Yen-Tyng Chen: Conceptualization, Formal analysis, Investigation, Methodology, Supervision, Writing – original draft. **Yuqing Zhou:** Conceptualization, Formal analysis, Investigation, Methodology, Visualization, Writing – review & editing. **Sharifa Williams:** Investigation, Methodology, Writing – review & editing. **Joel Cantor:** Conceptualization, Writing – review & editing. **Bruce G. Taylor:** Project administration, Writing – review & editing. **Phoebe A. Lamuda:** Project administration, Writing – review & editing. **Harold A. Pollack:** Funding acquisition, Writing – review & editing. **John Schneider:** Project administration, Writing – review & editing.

Declaration of competing interest

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= −2.07, p = 0.03; foreign-born: β = −3.18, p = 0.02) and US-born multiracial individuals (β = −1.96, p = 0.02) than their White counterparts. Among individuals with higher educational attainment, foreign-born Hispanics (β = −3.66, p < 0.001) and US-born Asians (β = −2.07, p = 0.01) reported worst mental health when exposed to racial discrimination out of all other racial, ethnic and foreign-born groups. Our results suggest that association of racial discrimination and mental health varies across racial, ethnic, foreign-born, and education subgroups. Using an intersectional approach to address the widening inequities in racial discrimination and mental health during the COVID-19 pandemic contextualizes unique experience of discrimination and provides crucial insight on the patterns of mental health among marginalized groups.

Keywords

Racial discrimination; Mental health; COVID-19; Intersectionality; Immigrations

1. Introduction

Racial discrimination is a fundamental driver of health inequities, and its impact has become even more evident during the COVID-19 pandemic (Krieger, 2020; Williams and Etkins, 2021). The increasingly racialized politics, heightened stigma and discrimination, and episodes of racially motivated violence during the COVID-19 pandemic have resulted in long-term social consequences among marginalized groups (Thomeer et al., 2023). Labeling COVID-19 as the “China virus” by an elected official in March 2020, the police murder of George Floyd in May 2020, and the killing of six Asian women in Atlanta in March 2021 are notable harmful acts arising from racial animus and structural racism. All of these racial attacks and stereotypes have pronounced negative effects on mental health, especially for racial and ethnic minoritized groups (Chae et al., 2021; Lee et al., 2022; Shi et al., 2022; Thomeer et al., 2023). Recent analysis of the 2019 National Household Interview Survey and the 2020–2021 Household Pulse Survey indicates there has been significantly worse mental health during the COVID-19 pandemic for Black, Hispanic, and Asian individuals compared to their White counterparts (Thomeer et al., 2023).

The Stress Process Theory posits that life strains including both acute and chronic social stressors fundamentally shape one’s mental and physical well-being, especially among marginalized populations who have disproportionately endured social disadvantages (Pearlin et al., 1981). Recent reviews of cross-sectional and longitudinal evidence indicates that negative life events such as racial discrimination in interpersonal, institutional, and societal contexts consistently and strongly relate to worse mental health outcomes (Carter et al., 2019; Williams et al., 2019). Longitudinal studies identified the cumulative negative effects of racial discrimination on its subsequent poor mental health among racial and ethnic minorities both in the United States (Choi et al., 2020; Qin et al., 2020; Sutin et al., 2016) and internationally (Hackett et al., 2020; Wallace et al., 2016). The global COVID-19 pandemic combined with polarized politics not only represent an unprecedented stressful environment, but also exacerbate the existing unequal distribution of coping resources and evoke pronounced and harmful mental health consequences for members of racial and ethnic minority groups. For example, in a national study that oversampled Asian, Black,

and Hispanic adults in October 2020, Shi and colleagues found that one unit increase in racial discrimination encounters was associated with an 471% and an 310% increase in probability of psychological distress and poor sleep quality among South and Southeast Asian respondents, respectively (Shi et al., 2022). Similarly, using a cross-sectional sample of Asian and Black adults collected in 5 major U.S. cities from May through July 2020, Chae and colleagues found that greater experience of vicarious racism and racism discrimination vigilance were both related to more symptoms of depression and anxiety among Asian and Black participants (Chae et al., 2021; Chae et al., 2021; Keum and Choi, 2023; Lee et al., 2022; Shi et al., 2022)

Life stressors such as racial discrimination are not unidimensional, instead, intersectionality of race and ethnicity with other sources of social disadvantage statues can converge and aggravate the production of stress and adverse mental health through diminished coping resources (Lewis et al., 2015; Pearlin et al., 1981). Immigration status is an important dimension when examining relationship between racial discrimination and mental health as immigrants encounter a unique profile of life stressors and constricted coping resources (Bulut and Gayman, 2016; Gee and Ford, 2011; Leong et al., 2013; Lewis et al., 2015; Morey, 2018). Anti-immigration policies and rhetoric exacerbate COVID-related racism, which accelerate socio-, political-, and economic-stress among racial/ethnic minorities with and without immigration status (Medel-Herrero et al., 2021; Morey, 2018; Williams and Etkins, 2021). Fear of deportation and detention, limited English proficiency, lack of social and economic protection, and limited health resources are not only harmful in terms of inaccessible coping resources, but also can diminish an individual's sense of mastery (i.e., the extent to which ones feel in control of their life situations), which in turn can put immigrants at a remarkable risk for negative mental health outcomes (Leong et al., 2013; Lewis et al., 2015; Medel-Herrero et al., 2021). Recent research conducted among Chinese immigrants in North Carolina found that anti-Asian discrimination was strongly related to psychological stress, and that relationship was independent of their contemporaneous stressors to the pandemic (e.g., general worries about the pandemic) (Stolte et al., 2022). Given the profound and disparate life experience during the COVID-19 pandemic, it is crucial to understand how individuals with different immigration status may experience discrimination and how the discrimination experience during such time associates with mental health.

Educational attainment is an important socioeconomic status (SES) indicator when describing the multifaceted profile of stress production. Findings from past research about how educational attainment plays a role in terms of discrimination experience and mental health are mixed (Lewis et al., 2015). Some studies found that people with higher levels of educational attainment are generally regarded to be less negatively impacted by discrimination on mental health due to their better access to social and health resources (Kessler et al., 1999; Walker et al., 2012). However, other studies found that Black, Hispanic, and non-White adults with higher levels of educational attainment reported more racial discrimination (Allen et al., 2019; Gaston et al., 2023) and experienced more negative impact from racial discrimination on mental and physical health possibly due to greater levels of participation of work, residential, and socialization environment or settings that were historically unwelcomed to non-White populations (Hudson et al., 2015; Ward et al.,

2019). To date, most research examining racial discrimination and mental health regarded educational attainment as a confounder and adjusted it in the model. Additional studies are needed to understand how racial discrimination is associated with mental health based on an individual's intersectional identity that may be particularly vulnerable during the COVID-19 pandemic. Research that uses an intersectionality approach to examine how a combination of social disadvantages may create different repertoires of racial discrimination and mental health is needed to unpack these complex and reciprocating associations and to inform targeted interventions.

While several studies have examined discrimination and mental health during COVID-19 pandemic (Chae et al., 2021; Keum and Choi, 2023; Lee et al., 2022; Shi et al., 2022), many of them focused on a specific racial and ethnic minoritized population. Our study focuses on multiple racial and ethnic groups and their intersectional identities with foreign-born status and SES (educational attainment in this study) using a national representative adult household sample in the United States. Such holistic approach is critical as the early period of the COVID-19 pandemic was a period of time constituting a significant worsening of mental health specifically to individuals with multiple marginalization. Our study aims to assess gaps between each subgroup of intersectional identity and US-born White individuals to understand the disproportionate mental health impact of racial discrimination during the COVID-19 pandemic.

2. Methods

2.1. Sampling and recruitment

The data for the current study were from a cross-sectional sample of 6515 U.S. adults collected between October 1 and November 19, 2021. This sample was drawn from the ongoing AmeriSpeak probability-based panel of over 45,000 households designed to be representative of the non-institutionalized U.S. population. The AmeriSpeak sampling approaches have been described in detail elsewhere. In brief, a stratified, area probability, and address-based sampling was used to select and sample U.S. households from the NORC at the University of Chicago (NORC) National Samling Frame. The AmeriSpeak panel is comparable to the U.S. Census American Community Survey (ACS) sample and has a sample coverage of about 97% of U.S. households.

For the current study, AmeriSpeak staff recruited the study sample through emails, texts, and phone and distributed informed consents. Most study participants completed the survey online and non-online participants were provided with telephone interviews. The survey was offered in English and Spanish, and a total of 6515 participants completed the survey (response rate = 38.2%). The study was approved by the Institutional Review Board (IRB) of NORC at the University of Chicago and the protocol for the analysis presented here was approved by the Rutgers University IRB.

2.2. Measures

Mental health outcome—We assessed general mental health using the validated five-item Mental Health Inventory (MHI-5), which is the subscale of the self-reported Short-

Form Health Survey (SF-36) (Berwick et al., 1991; Veit and Ware, 1983). MHI-5 includes five items that ask about the frequency of feeling experienced by respondents in the prior month: (1) been a very nervous person, (2) felt downhearted and blue, (3) felt calm and peaceful, (4) felt so down in the dumps that nothing could cheer you up, and (5) been a happy person. Items were answered on a 6-point Likert-type scale ranged from 1 = all of the time to 6 = none of the time. Two items were reverse coded, and the total scale score was converted to a score ranging from 0 to 100 in which the lower scores indicated poorer mental health. MHI-5 scores that are equal or lower than 54 indicates clinically significant mental distress (Cuijpers et al., 2009). The MHI-5 scores demonstrated strong internal consistency in the current study sample (Cronbach's alpha = 0.88).

Experience of discrimination—We asked participants whether they had ever personally experienced discrimination, been prevented from doing something, or been hassled or made to feel inferior because of their race, ethnicity, or color in 9 specified situations using a validated Experiences of Discrimination scale (Krieger et al., 2005). The 9 specified situations included (1) at school, (2) getting hired/getting a job, (3) at work, (4) getting housing, (5) getting medical care, (6) getting service in a store or restaurant, (7) getting credit/bank loans/a mortgage, (8) on the street/in a public setting, and (9) from the police/in the court. We summed the number of situations where participants experienced discrimination to form a composite score ranging from 0 to 9.

Race, ethnicity and foreign-born status—Participants who self-reported as Spanish, Hispanic, or Latino were categorized as Hispanic. For participants who were not Hispanic, they were asked to self-identify as White, Black, Asian, and other race. Participants answered two or more races were considered multiracial. Non-Hispanic other races were dropped from the current study. We created dummy variables to represent the ten racial, ethnic, and foreign-born groups: non-Hispanic White, non-Hispanic Black, Hispanic, non-Hispanic Asian, and non-Hispanic multiracial individuals (hereafter referred to as White, Black, Hispanic, Asian, multiracial individuals, respectively) by foreign-born status.

Sociodemographic variables—We included participants' sociodemographic characteristics, including age, gender, educational attainment, annual household income, employment status, and region of residence (i.e., Northeast, Midwest, South, West).

2.3. Data analysis

For the current analysis, participants were excluded if they were missing any of the following: (1) any MHI-5 items (n = 107), (2) all 9 perceived racial discrimination items (n = 15), and (3) foreign-born status (n = 24). We also excluded 93 participants who self-reported as other races as we did not have enough detailed data to correctly categorize them into specific racial and ethnic groups. This resulted in a final analytic sample of 6276 participants. We assessed the overall distribution of participant sociodemographic characteristics. We examined if mental health and perceived racial discrimination distributed differently by the ten racial, ethnic, and foreign-born groups through one-way ANOVA tests and stratified by educational attainment. We conducted bivariate and multivariable linear regressions to examine the associations of perceived racial discrimination with the

dependent variable mental health. The multivariable models were built sequentially (Models 1–3). Model 1 examines the overall impact of perceived racial discrimination on mental health adjusting for covariates. Then, we added interactions between perceived racial discrimination and racial, ethnic, foreign-born groups stratified by educational attainment (Models 2 and 3). The interaction models allowed us to determine whether the associations between racial discrimination experienced and mental health vary across the ten racial/ethnic/foreign-born status groups. All analyses were weighted to reflect sample selection probability and non-responses. To align our data to US Census benchmarks, we used statistical weights accounting for selection probabilities (balanced by sex, age, education, race, ethnicity, and region) and likelihood of non-response (using a response propensity approach calculating the conditional probability that a particular respondent completed the survey with the observed covariates) (Bethlehem et al., 2011). All analyses were performed using SAS software version 9.4 (SAS Institute Inc).

3. Results

Of the cross-sectional sample of 6276 respondents, the overall mean MHI-5 score was 69.91 (SD = 0.45). 19.1% of participants reported mental distress based on their MHI-5 score (i.e., MHI-5 score lower than 54). More than two fifths of participants (44%) reported having experienced racial discrimination in at least one of the nine situations specified from the survey (Table 1). Table 2 shows the weighted means distribution for the mean MIH-5 scores and racial discrimination experience stratified by racial, ethnic, foreign-born subgroups and by educational attainment. The range of the mean MHI-5 scores (lower scores represent worse mental health) ranged from a low of 59.12 (among US-born Asians with less than bachelor's degree) to a high of 75.02 (among US-born Black individuals with a bachelor's degree or above). The range of the mean number of situations where participants experienced racial discrimination ranged from a high of 4.83 (among US-born Black individuals with a bachelor's degree or above) to a low of 0.59 (among US-born White individuals with a bachelor's degree or above). Results from the group comparisons of mental health and racial discrimination experience show statistical significance (Table 2). Specifically, regardless of educational attainment, US-born Black individuals experience the most racial discrimination (experienced racial discrimination at >4 situations) out of all ten racial, ethnic, and foreign-born groups followed by US-born Asians (experienced racial discrimination at >3 situations). Discrimination experiences varied by educational attainment for certain racial/ethnic groups. Regardless of foreign-born status, Asians with higher educational attainment experienced significantly more racial discrimination than their less educated counterpart, whereas Hispanics with lower educational attainment experienced significantly more racial discrimination than their counterpart with higher educational attainment.

Table 3 presents the weighted estimated univariate and multivariable associations linking experience of discrimination with the dependent variable, mental health. Adjusting for participants' sociodemographic variables (Model 1), experienced discrimination in an additional situation was associated with 1.05 percentage points worse in mental health ($\beta = -1.05$, $p < 0.001$; small but significant effect size: partial eta square = 0.011). Models 2 and 3 present results of the analyses examining multiplicative effects between racial,

ethnic, foreign-born groups and racial discrimination experience by participants' educational attainment (Table 4). Among participants with less than a bachelor's degree, compared to US-born White individuals who experienced the same level of discrimination, US-born and foreign-born Asians and US-born multiracial individuals reported a significant poorer level of mental health (β = −2.07, $p = 0.03$; β = −3.18, $p = 0.02$; β = −1.96, $p = 0.02$, respectively). Among participants with a bachelor's degree or higher, compared to US-born White individuals, when experienced the same level of discrimination, foreign-born Hispanics and US-born Asians reported a significant poorer mental health (β = −3.66, $p < 0.001$; β = −2.07, $p = 0.01$, respectively). Regardless of educational attainment, the interactions between racial discrimination and race, ethnicity, and foreign-born sub-groups for Black individuals were not statistically significant.

Fig. 1 shows the means of MHI-5 scores corresponding to the number of situations where participants experienced discrimination for subgroups of race, ethnicity, foreign-born that had significant interactions in Table 4. There were significant downward trends in MHI-5 scores with increased level of discrimination for all Asian, US-born multiracial, and foreign-born Hispanic individuals compared to their US-born White counterparts. Specifically, for foreign-born Asians with less than a bachelor's degree, the mean MHI-5 score declined from 78.5 when experienced zero discrimination to 41.0 when experienced discrimination in nine situations, a decrease of 37.5 points. In comparison, for US-born White individuals with less than a bachelor's degree, MHI-5 score was 66.2 (zero discrimination) to 57.3 (discrimination in nine situations), a decrease of 8.9 points.

4. Discussion

The present study assessed racial, ethnic, and foreign-born specific racial discrimination experience and how this experience was differentially associated with mental health during the COVID-19 pandemic using a nationally representative sample of 6276 U.S. adults. The results demonstrated that 44% of participants had ever experienced racial discrimination, and highly educated Black and Asian individuals experienced the highest levels of racial discrimination. The associations of racial discrimination experience with mental health were most salient among Asians (regardless of birthplace), foreign-born Hispanics, and US-born multiracial individuals. Notably, the pattern of these associations further varied by educational attainment. Specifically, compared to highly educated White individuals, highly educated foreign-born Hispanics had the worst mental health when exposed to racial discrimination out of all other highly educated racial, ethnic, and foreign-born groups. Among individuals with lower educational attainment, Asians (regardless of birthplace) displayed the worst mental health when exposed to racial discrimination out of individuals with of all other race, ethnicity, and foreign-born status.

Our results show high prevalence of racial discrimination experience among U.S. adults. Consistent with recent studies, compared to White individuals, non-White individuals report significantly greater racial discrimination experience, especially among Black and Asian individuals during the COVID-19 pandemic (Chae et al., 2021; Lee et al., 2022; Shi et al., 2022). Furthermore, our stratified analysis indicates that experiences of racial discrimination are distinct with intersecting factors of race, ethnicity, foreign-born status,

and educational attainment. Regardless of birthplace, Hispanics with lower educational attainment experienced more racial discrimination than their counterparts with higher educational attainment. In contrast, regardless of birthplace, Black and Asian individuals with higher educational attainment experienced more racial discrimination than their counterparts with lower educational attainment. Our supplemental analysis shows that higher educated Asians tended to experience more racial discrimination in workplace such as in the context of getting hired. These findings suggest a unique profile of racial discrimination experience for highly educated Black and Asian individuals. Future research is warranted to further disentangle these sub-populations' racial discrimination experience.

We found strong associations between racial discrimination and mental health among US-born Asians with both low and high educational attainment. These study results are consistent with prior research indicating US-born Asians experienced a high level of stress, discrimination and poor mental health (Lau et al., 2013; Leong et al., 2013; Takeuchi et al., 2007; Wu et al., 2021). The study shows that US-born racial minorities, particularly Asians, may experience more discrimination compared to their foreign-born counterparts because they are more immersed in and involved with the White American culture and face more negative consequence from the racist rhetoric and hostile political climate (Morey et al., 2018; Takeuchi et al., 2007). US-born Asians are thus more vulnerable to racial discrimination since the start of the COVID-19 pandemic with the heightened anti-Asian xenophobia and acts of anti-Asian violence (Dhanani and Franz, 2020).

On the other hand, among individuals with less than a bachelor's degree, although foreign-born Asians had a better mental health status when they reported zero racial discrimination compared to their White counterparts, there was a huge drop in mental health status when they experienced discrimination in one additional situation and their mental health became the worst out of all other race/ethnicity and foreign-born groups. Similar to a recent study conducted among a nationally representative Asian sample during the COVID-19 pandemic, intersecting oppressions such as recent immigrant status, low educational attainment and lack of English-language ability may put Asian immigrants at a particularly high risk for exposure to direct verbal or behavioral discrimination, partly due to their high-risk occupation or essential jobs during the COVID-19 pandemic (McGarity-Palmer et al., 2023). Thus, such profound negative experiences may contribute to a detrimental effect on their mental health. Interestingly, we didn't find the significant association between racial discrimination and mental distress among foreign-born Asians with high educational attainment as they are usually regarded as the perpetual foreigner, especially under the previous political climate. It is possible that such a group may have strong resilience strategies (e.g., heritage or nationality specific support groups) to combat the deleterious effect of high-level discrimination (Chou and Feagin, 2015).

It is noteworthy that we found a strong effect of racial discrimination on mental health for foreign-born Hispanics with high educational attainment. This suggests that educational attainment did not minimize the negative effects of racial discrimination on mental health for foreign-born Hispanics. In line with the Minority Diminished Return Theory, education can generate a fewer number of beneficial outcomes, especially for psychological stress, among racial and ethnic minority groups compared to non-minority groups (Assari, 2018;

Assari et al., 2019). It is possible that foreign-born, highly educated Hispanics are still unambiguously exposed to a high level of structural demographic stereotype toward their racial and immigration status (Bellovary et al., 2020; Morey et al., 2018). And even with the higher educational attainment, they might be less likely to secure jobs or be more likely to be exposed to stressful working environment compared to their White counterparts due to systematic racial and ethnic stereotyping whereas Hispanics are often viewed as "foreigners" and are subordinate to non-Hispanic White individuals (Assari and Bazargan, 2019; LeBrón and Viruell-Fuentes, 2019).

Lastly, we found that racial discrimination exacerbated mental health for US-born multiracial individuals who had low educational attainment. This finding is consistent with past research that indicates multiracial individuals are at a higher risk of a wide range of negative mental health outcomes and greater discrimination experience. Our supplemental analysis shows that more than 40% of multiracial individuals self-identified as mixed race of White and one other race (e.g., White and Black, White and Asian, White and Native American). It is possible that multiracial individuals face marginalization from both outgroups and ingroups and are impacted by negative life experiences such as ambiguous racial affiliation, social exclusion, cultural conflict, and identity denial (Albuja et al., 2018; Oh et al., 2023). And such marginalization may be particularly severe especially for multiracial individuals who have low educational attainment due to limited resources that hinder the development of their unique strength and resilience (Oh et al., 2023).

4.1. Limitations and future research

Our findings must be interpreted in light of several limitations. First, our survey was offered only in English and Spanish, and therefore might have had a higher non-response rate for individuals who spoke other languages (e.g., Asian languages) or under-report their actual discrimination experiences due to language barriers. It is possible that we underestimated the racial discrimination experience and its association with mental health as previous research shows that limited English proficiency is associated with greater discrimination experience (McGarity-Palmer et al., 2023). Second, the current study only measured direct experience of racial discrimination in physical settings. However, during the COVID-19 pandemic, racially motivated attacks or vicarious discrimination were prevalent online and on social media platforms. It is possible that we under-estimate the prevalence of racial discrimination experienced and its association with mental health, especially for individuals with higher educational attainment who tended to work from home and engaged more in online settings (Keum and Choi, 2023). We suggest further research examining different forms of racial discrimination across racial, ethnic, and foreign-born subgroups. Third, we measured lifetime experience of racial discrimination while we measured past month mental health outcome. Meta-analysis of past work shows that recent experience of racial discrimination had a stronger consequence for mental health compared to lifetime experience (Carter et al., 2019). In the context of the global pandemic and the racialized social environment, it is possible that racial and ethnic minorities and foreign-born individuals experienced a much higher numbers of racial experience compared to their White counterparts. Fourth, we used self-report surveys as our data collection method which opens the possibility that social desirability biases could have emerged and affected our results. However, because the

vast majority of our surveys were done through the privacy of a secure web-based survey platform, as opposed to over the phone, may have helped to reduce the potential impact of social desirability (Kreuter et al., 2009). Lastly, as the current study is a cross-sectional study, causal inference is limited. Future longitudinal research is warranted to determine the long-term effects of COVID-related racism on mental health among racial, ethnic, and foreign-born minority groups.

5. Conclusion

Our results demonstrate the differential mental health gaps between race, ethnicity, foreign-born, and education subgroups and US-born White individuals first year into the COVID-19 pandemic The gaps in mental health were particularly large for Asians, foreign-born Hispanics, and US-born multiracial individuals when they exposed to the same level of discrimination as their US-born White counterparts. Highly educated foreign-born Hispanics, and foreign-born Asians and US-born multiracial individuals are particular vulnerable to racial discrimination on mental health. Collectively, our study highlights that addressing racial discrimination in the context of multiple marginalized statuses such as race, ethnicity, foreign-born status, and educational attainment is important in disentangling the widening disparities in mental health due to racial discrimination. Public health interventions to address racial discrimination and its harmful mental health consequences must be intersectional, multicultural, and politically relevant. Specifically, targeted interventions for the foreign-born Hispanics, Asians, and multiracial individuals related to increasing utilization of mental health resources and resilience are particularly urged. For example, interventions providing accessible and culturally appropriate mental health resources, incorporating language services, and addressing hate and discrimination at community settings need to be developed, especially for foreign-born and low educational attainment racial minoritized groups (e.g., foreign-born Asians). Additionally, mental health resources and anti-racism practices should also be prioritized at multiple levels and institutions to address the impact of discrimination on mental health for minoritized groups (e.g., foreign-born Hispanics) that have been historically under-representative in certain settings (e.g., higher education institutes or workplace). Future longitudinal studies are warranted to explore how multiple social oppressions intersect with individuals' experience of racial discrimination and how those intersectional oppressions collectively and distinctly impact mental health.

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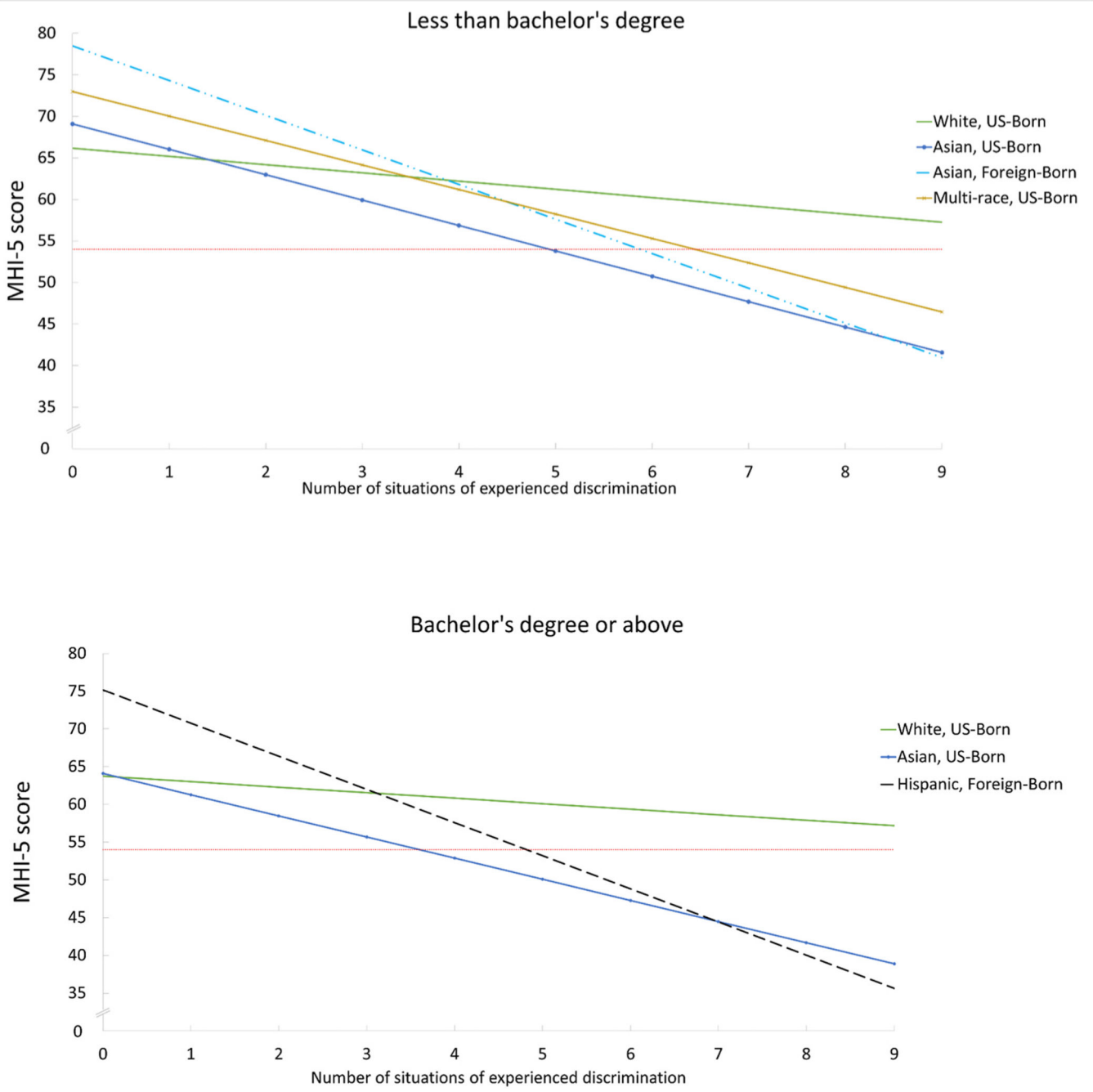

Fig. 1.

Mean MHI-5 scores by numbers of situations of experienced discrimination by educational attainment, AmeriSpeak panel, October–November 2021 (n = 6267).

Table 1

Descriptive statistics of study sample from AmeriSpeak panel, October–November 2021 (n = 6276).

Characteristics	n (%) or mean (SD)
Mental health (assessed by MHI-5) [a]	69.91 (20.99)
Number of situations in which experienced discrimination	
0	3715 (55.48%)
1	737 (12.47%)
2	489 (8.53%)
3	320 (5.20%)
4	275 (5.23%)
5	219 (3.99%)
6	180 (3.40%)
7	111 (1.36%)
8	93 (2.19%)
9	137 (2.15%)
Total number of situations experienced of discrimination (mean, SD)	1.53 (2.33)
Race, ethnicity and foreign-born combined	
White, US-born	4398 (61.07%)
White, foreign-born	160 (2.26%)
Black, US-born	640 (11.80%)
Black, foreign-born	40 (0.50%)
Hispanic, US-born	459 (12.60%)
Hispanic, foreign-born	212 (4.21%)
Asian, US-born	63 (2.31%)
Asian, foreign-born	99 (2.90%)
Multi-race, US-born	191 (2.11%)
Multi-race, foreign-born	14 (0.23%)
Age	
18–25 years	245 (11.72%)
26–39 years	1293 (24.80%)
40–54 years	1275 (22.71%)
55–64 years	1467 (18.26%)
65+ years	1996 (22.50%)
Gender	
Male	2456 (46.33%)
Female	3790 (53.03%)
Transgender	12 (0.25%)
Do not identify as male, female, or transgender	18 (0.40%)
Income	
Less than $25,000	979 (10.94%)
$25,000 to $49,999	1455 (23.59%)
$50,000 to $84,999	1563 (22.87%)

Characteristics	n (%) or mean (SD)
$85,000 to $149,999	1647 (24.04%)
$150,000 or over	632 (9.55%)
Employment	
Employed (full or part-time)	3260 (54.39%)
On temporary layoff or looking for work	41 (1.23%)
Unemployed, retired/disabled/other	2962 (44.38%)
Education	
Less than High School	193 (8.54%)
High School Graduate or Equivalent	951 (27.41%)
Vocational/Tech School/Some College/Associates	2359 (28.18%)
Bachelor's Degree or above	2773 (35.87%)
Region	
Northeast	1310 (17.68%)
Midwest	1226 (20.25%)
South	2204 (38.37%)
West	1536 (23.70%)

[a]Five-item Mental Health Inventory (MHI-5) scores ranged from 0 to 100. Lower scores represent poorer mental health. MHI-5 scores ≤54 indicates clinically significant mental distress.

[b]All analyses were weighted to reflect sample selection probability and non-responses.

[c]Non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, and non-Hispanic multiracial individuals were referred to as White, Black, Asian, multiracial individuals, respectively.

Table 2

Mean MHI-5 and experience of discrimination scores for study sample by race, ethnicity, and foreign-born status, AmeriSpeak panel, October–November 2021 (n = 6276).

	MHI-5 [a]		Experience of discrimination	
	Mean (SD)	Group comparison [b] F (*p*-value)	Mean (SD)	Group comparison [b] F (*p*-value)
Less than bachelor's degree educational attainment (n = 3503)				
White, US-born	69.72 (21.69)	3.27 (0.0006)	0.83 (1.57)	116.25 (<.0001)
White, foreign-born	66.33 (23.71)	-	0.94 (2.18)	-
Black, US-born	67.49 (25.18)	-	4.16 (3.61)	-
Black, foreign-born	74.33 (20.97)	-	2.91 (2.77)	-
Hispanic, US-born	68.19 (30.46)	-	2.13 (3.53)	-
Hispanic, foreign-born	64.17 (26.44)	-	2.12 (2.57)	-
Asian, US-born	59.12 (32.19)	-	3.08 (5.53)	-
Asian, foreign-born	73.73 (26.16)	-	1.85 (3.16)	-
Multi-race, US-born	68.16 (22.59)	-	2.26 (2.54)	-
Multi-race, foreign-born	61.30 (16.55)	-	2.36 (3.76)	-
Bachelor's degree or above educational attainment (n = 2773)				
White, US-born	72.89 (15.98)	10.59 (<.0001)	0.59 (1.09)	178.89 (<.0001)
White, foreign-born	72.26 (14.59)	-	0.82 (1.27)	-
Black, US-born	75.02 (18.40)	-	4.83 (2.42)	-
Black, foreign-born	80.13 (17.93)	-	3.92 (2.29)	-
Hispanic, US-born	64.11 (22.52)	-	1.81 (2.84)	-
Hispanic, foreign-born	77.71 (18.61)	-	1.73 (2.07)	-
Asian, US-born	61.69 (25.36)	-	3.55 (3.30)	-
Asian, foreign-born	72.84 (22.69)	-	1.95 (2.66)	-
Multi-race, US-born	68.45 (14.36)	-	2.03 (1.69)	-
Multi-race, foreign-born	67.78 (22.69)	-	2.82 (1.40)	-

[a] Five-item Mental Health Inventory (MHI-5) scores ranged from 0 to 100. Lower scores represent poorer mental health.

[b] Group comparison is performed using one-way ANOVA tests.

[c] All analyses were weighted to reflect sample selection probability and non-responses.

[d] Non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, and non-Hispanic multiracial individuals were referred to as White, Black, Asian, multiracial individuals, respectively.

Table 3

Estimated association linking experience of discrimination with mental health, AmeriSpeak panel, October–November 2021 (n = 6267).

	Bivariate		Multivariable (Model 1) [b]	
	β (95% CI)	***P* value**	**Model 1 β (95% CI)**	***P* value**
Experience of discrimination	−1.06 (−1.28, −0.84)	<0.0001	−1.05 (−1.30, −0.81)	<0.0001
Race, ethnicity and foreign-born[a]				
White, foreign-born	−1.48 (−4.99, 2.03)	0.41	−1.33 (−4.59, 1.93)	0.43
Black, US-born	−1.43 (−3.07, 0.22)	0.09	4.64 (2.84, 6.44)	<0.0001
Black, foreign-born	7.30 (−0.04, 14.64)	0.05	11.26 (4.43, 18.08)	0.001
Hispanic, US-born	−3.70 (−5.31, −2.10)	<0.0001	1.61 (0.01, 3.20)	0.048
Hispanic, foreign-born	−3.12 (−5.73, −0.51)	0.02	0.85 (−1.62, 3.32)	0.50
Asian, US-born	−10.39 (−13.86, −6.92)	<0.0001	−4.71 (−8.08, −1.35)	0.01
Asian, foreign-born	2.19 (−0.92, 5.31)	0.17	5.12 (2.16, 8.08)	0.001
Multi-race, US-born	−2.67 (−6.30, 0.96)	0.15	1.04 (−2.34, 4.42)	0.55
Multi-race, foreign-born	−7.61 (−18.4, 3.18)	0.17	−1.14 (−11.11, 8.84)	0.82
Experience of discrimination × race, ethnicity and foreign-born[a]				
Experience of discrimination × White, foreign-born	–	–	–	–
Experience of discrimination × Black, US-born	–	–	–	–
Experience of discrimination × Black, foreign-born	–	–	–	–
Experience of discrimination × Hispanic, US-born	–	–	–	–
Experience of discrimination × Hispanic, foreign-born	–	–	–	–
Experience of discrimination × Asian, US-born	–	–	–	–
Experience of discrimination × Asian, foreign-born	–	–	–	–
Experience of discrimination × Multiracial, US-born	–	–	–	–
Experience of discrimination × Multiracial, foreign-born	–	–	–	–
Participant sociodemographic covariates				
Age				
18–25 years	Reference		Reference	
26–39 years	3.20 (1.45, 4.94)	<0.0001	2.25 (0.48, 4.03)	0.01
40–54 years	9.11 (7.34, 10.88)	<0.0001	7.47 (5.66, 9.28)	<0.0001
55–64 years	15.24 (13.39, 17.08)	<0.0001	14.40 (12.54, 16.25)	<0.0001
65+ years	19.13 (17.35, 20.90)	<0.0001	19.01 (17.13, 20.89)	<0.0001
Gender				
Male	Reference		Reference	
Female	−4.23 (−5.27, −3.20)	<0.0001	−3.80 (−4.78, −2.82)	<0.0001
Transgender	−29.23 (−39.60, −18.86)	<0.0001	−20.36 (−30.04, −10.69)	<0.0001
Do not identify as male, female, or transgender	−28.05 (−36.27, −19.83)	<0.0001	−22.69 (−30.38, −15)	<0.0001
Income				
$150,000 or over	Reference		Reference	
$85,000 to $149,999	−1.8 (−3.77, 0.17)	0.07	−1.59 (−3.44, 0.26)	0.09

	Bivariate		Multivariable (Model 1) [b]	
	β (95% CI)	*P* value	Model 1 β (95% CI)	*P* value
$50,000 to $84,999	−0.94 (−2.92, 1.04)	0.35	−0.60 (−2.50, 1.30)	0.54
$25,000 to $49,999	−4.63 (−6.60, −2.65)	<0.0001	−3.64 (−5.58, −1.69)	<0.001
Less than $25,00	−9.42 (−11.45, −7.40)	<0.0001	−6.48 (−8.54, −4.42)	<0.0001
Employment				
Employed (full or part-time)	Reference		Reference	
On temporary layoff or looking for work	−11.74 (−16.48, −7.00)	<0.0001	−11.57 (−15.98, −7.16)	<0.0001
Unemployed, retired/disabled/other	1.02 (−0.035, 2.07)	0.06	−3.03 (−4.16, −1.90)	<0.0001
Education				
Bachelor's Degree or above	Reference		Reference	
Vocational/Tech School/Some	−3.24 (−4.54, −1.93)	<0.0001	−0.39 (−1.67, 0.89)	0.55
College/Associates				
High School Graduate or Equivalent	−2.34 (−3.65, −1.02)	0.001	0.39 (−0.96, 1.75)	0.57
Less than High School	−6.89 (−8.86, −4.91)	<0.0001	−1.20 (−3.21, 0.81)	0.24
Region				
Northeast	Reference		Reference	
Midwest	−0.94 (−2.63, 0.76)	0.28	2.39 (0.80, 3.97)	0.003
South	1.07 (−0.42, 2.57)	0.16	3.12 (1.71, 4.53)	<0.0001
West	0.14 (−1.50, 1.77)	0.87	2.31 (0.76, 3.87)	0.004

[a] US-born non-Hispanic White individuals were used as the reference group.

[b] Multivariable models adjusted for age, gender, income, employment, educational attainment, and region.

[c] Five-item Mental Health Inventory (MHI-5) scores ranged from 0 to 100. Lower scores represent poorer mental health.

[d] All analyses were weighted to reflect sample selection probability and non-responses.

[e] Non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, and non-Hispanic multiracial individuals were referred to as White, Black, Asian, multiracial individuals, respectively.

[f] β represents sample parameter or regression coefficient.

Table 4

Estimated multivariable associations linking experience of discrimination with mental health by educational attainment, AmeriSpeak panel, October–November 2021 (n = 6267).

	Less than bachelor' s degree educational attainment		Bachelor's degree or above educational attainment	
	Model 2 β (95% CI)	***P* value**	**Model 3 β (95% CI)**	***P* value**
Experience of discrimination	−0.99 (−1.55, −0.44)	0.0004	−0.73 (−1.38, −0.09)	0.03
Race, ethnicity and foreign-born[a]				
White, foreign-born	−5.27 (−10.99, 0.44)	0.07	−0.45 (−4.77, 3.88)	0.84
Black, US-born	0.50 (−2.75, 3.75)	0.77	10.55 (5.71,15.38)	<0.0001
Black, foreign-born	16.79 (−1.06, 34.64)	0.07	4.22 (−8.54, 16.97)	0.52
Hispanic, US-born	4.56 (2.04, 7.08)	<0.001	−6.37 (−9.43, −3.31)	<0.0001
Hispanic, foreign-born	1.21 (−3.17, 5.59)	0.59	11.41 (6.43, 16.38)	<0.0001
Asian, US-born	2.93 (−4.7, 10.56)	0.45	0.34 (−6.05, 6.72)	0.92
Asian, foreign-born	12.31 (4.78, 19.85)	0.001	0.09 (−4.03, 4.21)	0.97
Multi-race, US-born	6.83 (1.11, 12.55)	0.02	−2.95 (−9.55, 3.65)	0.38
Multi-race, foreign-born	−8.45 (−26.27, 9.38)	0.35	0.07 (−27.90, 28.04)	1.00
Experience of discrimination × race, ethnicity and foreign-born[a]				
Experience of discrimination × White, foreign-born	1.09 (−1.5, 3.68)	0.41	1.53 (−1.10, 4.16)	0.26
Experience of discrimination × Black, US-born	0.75 (−0.06, 1.55)	0.07	−0.91 (−1.98, 0.16)	0.09
Experience of discrimination × Black, foreign-born	−1.14 (−5.37, 3.09)	0.60	1.45 (−1.35, 4.26)	0.31
Experience of discrimination × Hispanic, US-born	−0.57 (−1.43, 0.29)	0.19	0.72 (−0.42, 1.86)	0.21
Experience of discrimination × Hispanic, foreign-born	−1.13 (−2.62, 0.36)	0.14	−3.66 (−5.57, −1.75)	<0.001
Experience of discrimination × Asian, US-born	−2.07 (−3.92, −0.22)	0.03	−2.07 (−3.68, −0.47)	0.01
Experience of discrimination × Asian, foreign-born	−3.18 (−5.89, −0.47)	0.02	1.50 (−0.04, 3.04)	0.06
Experience of discrimination × Multi-race, US-born	−1.96 (−3.60, −0.32)	0.02	0.23 (−2.01, 2.46)	0.84
Experience of discrimination × Multi-race, foreign-born	1.93 (−3.10, 6.95)	0.45	0.99 (−7.46, 9.43)	0.82

[a] US-born non-Hispanic White individuals were used as the reference group.

[b] Multivariable models adjusted for age, gender, income, employment, and region.

[c] Five-item Mental Health Inventory (MHI-5) scores ranged from 0 to 100. Lower scores represent poorer mental health.

[d] All analyses were weighted to reflect sample selection probability and non-responses.

[e] Non-Hispanic White, non-Hispanic Black, non-Hispanic Asian, and non-Hispanic multiracial individuals were referred to as White, Black, Asian, multiracial individuals, respectively.

[f] β represents sample parameter or regression coefficient.