Ethnic Discrimination, Social Cohesion, and Mental Health Among Latinx Adults

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The negative effects of ethnic discrimination on depression symptoms have led researchers to identify potential risk and protective variables of this relationship. While some studies have focused on individual level factors, little research has explored the role of community-level variables, or the combination of both. The present study of Latinx adults ($N = 304$) tested a moderated mediation model to examine if alcohol use was a mediator of ethnic discrimination and depression under certain levels of social cohesion. Results found that alcohol use was a mediator between ethnic discrimination and depression symptoms and social cohesion moderated this relationship, such that alcohol use was not significant at higher levels of social cohesion. Implications and future directions are discussed.

Public Policy Relevance Statement
Ethnic discrimination continues to engender poor mental health outcomes among the Latinx community. The present study examined the role of neighborhood- and individual-level factors in contributing to the relationship between ethnic discrimination and depression symptoms. The findings suggest that social cohesion serves a protective function highlighting the importance of community on mental health.

As the Latinx community continues to grow in the United States, mental health disparities persist or have worsened in recent years (Webb Hooper et al., 2020). Recent negative sociopolitical rhetoric on immigration policies have centered Latinx communities and highlighted the daily experiences of ethnic discrimination that individuals and families continue to endure. Ethnic discrimination has been consistently linked to poor mental health, particularly depression (Andrade et al., 2021; Lee & Ahn, 2012; Williams et al., 2019). Theoretical frameworks have posited that an underlying pathway linking ethnic discrimination and depression includes engaging in unhealthy behaviors, such as alcohol use (Pascoe & Smart Richman, 2009; Richman et al., 2018). Furthermore, these models suggest that protective and risk factors can influence the nature of these relationships. To date, most research has focused on internal factors, yet there is an increased need to also understand these relationships within a community context. For example, *social cohesion*, or the presence of trust and reciprocity among neighbors, has been identified as a

community-level variable associated with positive outcomes (Hong et al., 2014; Moore & Kawachi, 2017; Mulvaney-Day et al., 2007) that may play a role in mitigating negative psychological outcomes. However, minimal empirical research exists documenting the role of social cohesion in relation to ethnic discrimination, alcohol use, and depression symptoms among Latinx adults. The present study, therefore, examines a moderated mediational model to evaluate the role of alcohol use as a mediator between ethnic discrimination and depression symptoms, which is conditional on the level of social cohesion.

Ethnic Discrimination and Mental Health

Ethnic discrimination refers to the negative judgment and differential treatment of individuals because of their membership in a racial or ethnic group (Williams et al., 1999). Although a bulk of empirical research has focused on the experiences of Black Americans, approximately 20%–79% of Latinx individuals report instances of ethnic discrimination (Almeida et al., 2016; Arellano-Morales et al., 2015; Boutwell et al., 2017). Recent years have seen an increase in anti-immigrant attitudes, specifically directed at Latinx groups (Newman et al., 2018), resulting in a need to better understand the negative psychological consequences associated with ethnic discrimination among Latinxs. Consistent evidence has shown a robust relationship between ethnic discrimination and depression with Latinx samples (Andrade et al., 2021). For example,

a meta-analysis reported a statistically significant effect size in Latinx studies linking ethnic discrimination with increased depression symptoms (Lee & Ahn, 2012).

A potential mediational pathway underlying the relationship between ethnic discrimination and depression symptoms could be engaging in unhealthy behaviors, namely, increased alcohol use (Pascoe & Smart Richman, 2009; Richman et al., 2018). Generally speaking, ethnic discrimination has been associated with an increase in alcohol consumption and drinking-related problems, although some inconsistencies have been noted (Gilbert & Zemore, 2016). Recently, findings from a large nationally representative study indicated that experiences of ethnic discrimination were associated with a 1.5 greater risk for mild alcohol use disorder (AUD), 1.6 greater risk for moderate AUD, and a 2.3 greater risk for severe AUD (Glass et al., 2020). No significant differences were found across racial/ethnic groups, although the authors concluded that experiencing more discriminatory events and poverty may contribute to the severity of AUD. Other recent reports have concluded that there is a stronger correlation between ethnic discrimination and substance use, including alcohol, among Latinx groups than other racial/ethnic groups (Carter et al., 2019; Reyes et al., 2021). A systematic review of research with Latinx samples noted a significant relationship between ethnic discrimination and lifetime AUD (Andrade et al., 2021).

Alcohol use and depression have been highly correlated in the empirical research with both conditions commonly co-occurring. For example, a meta-analysis revealed that the presence of either Major Depression or AUD doubled the risk for the second disorder (Boden & Fergusson, 2011). Furthermore, the authors concluded that the most plausible causal association is one in which AUD increases the risk for depression, not vice versa. In fact, some reports have suggested causal links in which alcohol use leads to depression (Fergusson et al., 2009). This evidence highlights the detrimental down-stream psychological effects of alcohol use (Johnson et al., 2013). Research has also noted that mental health problems or distress can result in alcohol use as a way of coping with negative internal experiences, commonly referred to as the self-medication hypothesis (Hawn et al., 2020). For example, among a multiethnic sample, depression mediated the relationship between social adversity and heavy alcohol drinking (Mulia & Zemore, 2012), indicating that the directionality of these relationships is still unclear. Although inconsistencies exist, theoretical and practical accounts suggest that alcohol use may underlie the relationship between ethnic discrimination and depression symptoms for Latinx individuals, yet more research is needed in this area.

Social Cohesion

Beyond individual variables, community-level factors and characteristics are thought to influence individual health, making it important to take into account the way that community members relate to one another (Sampson et al., 1997). *Social cohesion* has been defined as "a state of affairs reflecting to what extent individuals in a society can trust, help, and cooperate with one another, share a common identity or sense of belonging, and manifest these feelings in their behavior" (p. 289, Chan et al., 2006). In essence, social cohesion represents a neighborhood-level of trust, reciprocity, mutual aid, and collective support among residents (Hong et al., 2014). The benefits of social cohesion have been thought to include

the ability to engage in collective action and support, enforce social norms and health behaviors, communicate solidarity, and facilitate access to key resources (Moore & Kawachi, 2017).

In a seminal article about social cohesion, Kawachi et al. (1997) reported that, among a nationally representative sample, a lack of social trust was related to increased total mortality. More recent work has suggested that social cohesion is associated with positive mental health outcomes (Fone et al., 2007). For example, social cohesion was negatively correlated with psychological distress among a large sample of ethnic-diverse participants, including Latinxs (Rios et al., 2012). Another report indicated that low levels of social cohesion and high levels of neighborhood violence were associated with increased depression scores among healthy adults (Mair et al., 2009). Among a sample of 6,814 multiethnic participants ages 45–84, low social cohesion was associated with higher depression symptoms, increased likelihood to smoke, and decreased tendency to walk for exercise when compared to high social cohesion (Echeverría et al., 2008).

Specific to Latinx groups, social cohesion has been associated with reduced depression among immigrants and Latinx adults (Perez et al., 2015; Vega et al., 2011) and has been shown to moderate the relationship between cultural stressors and externalizing symptoms in Mexican American adolescents (Nair et al., 2013). Studies have also found that low social cohesion was associated with alcohol use (greater binge drinking), among large samples of Mexican American (Vaeth et al., 2015) and Puerto Rican (Vaeth et al., 2019) participants.

Still, some research has noted nonsignificant findings when examining social cohesion with diverse samples (Echeverría et al., 2008). As an example, one empirical study with Latinxs found that social cohesion was correlated with self-reported mental and physical health (Mulvaney-Day et al., 2007). However, these initial findings became nonsignificant when demographic variables, such as family support, education, and income, were included in the model. Although some reports may differ, a bulk of work reviewed suggests that social cohesion may serve a protective function. It has been postulated that social cohesion can foster a buffering effect by promoting and encouraging desirable health behaviors across the neighborhood (Kim et al., 2020; Murillo et al., 2016). Social cohesion can also provide emotional or social support that translates into adaptive functioning (Hong et al., 2014). As such, it is important to examine the role of social cohesion in the context of ethnic discrimination and mental health.

The purpose of the present study was to examine a moderated mediational model that helps to further elucidate the psychological consequences of ethnic discrimination among Latinx adults. As such, to what extent does social cohesion moderate the ability of alcohol use to mediate the relationship between ethnic discrimination and depression symptoms? It was expected that ethnic discrimination would be indirectly associated with depression symptoms through alcohol use, which would be conditional on the level of social cohesion. It was hypothesized that the conditional indirect effect would show that social cohesion would reduce the ability of alcohol use to function as a mediator while accounting for key covariates.

Method

Participants included 304 Latinx adults who averaged 43.57 years of age (SD = 15.08, range = 18–87) the majority of which were

women (65%, n = 198) and born outside of the United States (86%, n = 262). On average, foreign-born individuals reported having immigrated to the United States around the age of 25 (SD = 12.54, range = 1–69) and approximately 71% (n = 212) indicated being a U.S. citizen. Regarding cultural background, the majority of this sample stated being of Mexican descent (i.e., Mexican, Mexican-American, Chicana/o; 87.3%, n = 262). Individuals identifying as Puerto Rican (7.6%, n = 23), Central and South American (3%, n = 9), or Other group (1.9%, n = 6) were also included in the sample. Regarding socioeconomic status, participants predominately reported making an annual household income of $35,000 or less (74.3%, n = 226), with about 15% (n = 46) reporting between $35,000 and $65,000, and approximately 5% (n = 15) stating earning $65,000 or more. As an additional indicator of socioeconomic standing, around 40% (n = 121) of the sample indicated having health insurance. Educational attainment reported by participants included less than high school (21.7%, n = 66), some high school but no degree (11.2%, n = 34), high school degree or equivalency (27.6%, n = 84), some college (19.1%, n = 58), having a bachelor's degree (10.5%, n = 32), and having a graduate degree (8.2%, n = 25).

Procedures

Individuals who self-identified as Latinx/o/a or Hispanic were recruited from local community centers and health clinics which serve the Latinx community. Upon a brief explanation of the study and informed consent, including confidentiality, voluntary nature of the study and compensation, participants were asked to complete a packet of paper and pencil surveys which took approximately 30–45 min to complete. The majority of participants chose to complete the questionnaire packet in Spanish (88%; 12% in English). Bilingual research assistants remained available during data collection to answer any participant questions or needed clarifications. Upon completion of surveys, participants were provided a list of mental health resources within the community offering both Spanish and English services. In addition, each participant was compensated with $20 cash for completion of the study. All study activities were reviewed and approved by Marquette University's Institutional Review Board.

Measures

Ethnic Discrimination. The Brief-Perceived Ethnic Discrimination Questionnaire (B-PEDQ; Brondolo et al., 2005) is a 17-item self-report questionnaire that assesses exposure to experiences of racial/ethnic discrimination over an individual's lifetime. Items from this measure apply to multiple racial and ethnic groups. The questionnaire asks participants to rate how frequently they experienced a series of events because of their race/ethnicity. A sample item is "how often have you been treated unfairly by co-workers or classmates?" Participants rate the frequency of the item using a Likert scale from 1 (never) to 5 (very often). Overall scores were calculated by taking the mean of all the items. Scores ranged from 1 to 5 with higher scores indicating more reports of racial/ethnic discrimination. Brondolo et al. (2005) reported a Cronbach's α of .87 for the measure. In the present study, the B-PEDQ showed excellent reliability with a α = .92.

Social Cohesion. The Neighborhood Social Cohesion Scale (NSCS; Sampson et al., 1997) is a 10-item self-report measure that asks participants about social connections within their neighborhood. Sample items ask participants to rate the extent to which they agree with statements, such as, "people in the neighborhood can be trusted" and "my neighbors look out for each other" on a 5-point Likert scale from 1 (not at all) to 5 (completely). Total sum scores were calculated with higher scores indicating greater cohesion. The NSCS displayed excellent reliability for the present study with a α = .92.

Family Support. The Mexican American Cultural Values Scale (MACVS; Knight et al., 2010) is a 50-item self-report measure that assesses a person's traditional Latinx and mainstream U.S. values. For the purpose of the present study, only the family support subscale was used. Participants rated how much they agree with statements, such as, "parents should teach their children that the family always comes first" using a 5-point Likert scale from 1 (not at all) to 5 (completely). Higher scores indicate a higher presence of the cultural value. The family support subscale showed good reliability coefficient with α = .80.

Alcohol Use. The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1987) is a 10-item self-report measure that assesses a person's relationship with alcohol including: alcohol intake, potential dependence on alcohol, and experience of alcohol-related harm. Participants respond to items, such as, "how often do you have a drink containing alcohol?" using a Likert scale weighted from 0 to 4, generally focusing on frequency of occurrence. Total scores are summed and can range from 0 to 40. Higher scores indicate higher consumption with scores of 15 or more indicating probable alcohol dependence. The present study showed good reliability coefficient with α = .83.

Depression. A brief version of the Center for Epidemiological Studies—Depression scale (BCES-D; Radloff, 1977) was used to measure depression symptoms. This 10-item version has been shown to display good convergent and divergent validity (Miller et al., 2008). Participants are asked to assess the frequency with which they have experienced each item within the past week on a 4-point Likert scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Scores are summed and range from 0 to 30, with a score of 10 or greater suggesting clinical levels of depression (Andresen et al., 1994). This measure has been used among various Latinx samples previously and displayed good internal consistency (Grzywacz et al., 2010). Reliability coefficients for the present study revealed α = .79.

Data Analysis

Tests of moderated mediation were conducted using the SPSS macro PROCESS as established by Hayes (2017). Moderated mediation analyses assess the presence of a conditional indirect effect of a predictor on an outcome. Moderated mediation evaluates the strength of an indirect effect based on the level or condition of the moderator variable (Preacher et al., 2007). PROCESS uses a bootstrapping methodology, a nonparametric resampling technique, allowing for more robust tests of significance and decreasing likelihood of Type 1 error (Hayes, 2017; Preacher & Hayes, 2008).

Bootstrapping calculates conditional indirect effects through thousands of samples drawn from the original study sample, 10,000 in this case, producing percentile confidence intervals. Confidence intervals which do not include the value of zero are indicative of a statistically significant difference from zero at $p < .05$ denoting statistical significance. Furthermore, an Index of Moderated Mediation is calculated testing the statistical significance of the conditional indirect effect.

Results

Descriptive Analyses

Table 1 provides means, standard deviations, and correlations for main study variables. Using a previously established clinical cutoff score, 44.9% ($n = 135$) of the sample reported experiencing elevated levels of depression symptoms. Alcohol use scores were, on average, well below generally used cutoff guidelines. Social cohesion mean scores suggested that participants generally reported minimal social cohesion or closeness with their neighbors. As expected, depression was correlated with ethnic discrimination and alcohol use.

Independent samples t tests were conducted to examine potential mean differences of study variables by gender. The only statistically significant gender difference was observed for alcohol use, $t(298) = 32.83$, $p < .001$, with men reporting higher use ($M = 3.80$, $SD = 5.17$) than women ($M = 1.85$, $SD = 2.83$). In terms of annual household income, a one-way analysis of variance revealed significant differences for social cohesion, $F(2, 281) = 3.26$, $p = .04$. Post-hoc analyses suggested that individuals who reported an annual income greater than \$65,000 ($M = 15.60$, $SD = 7.09$) reported higher social cohesion than those earning less (\$20,000–\$35,000: $M = 12.04$, $SD = 5.26$; \$35,000–\$65,000: $M = 11.85$, $SD = 5.00$).

Moderated-Mediational Analyses

The current analyses assessed conditional indirect effects by testing alcohol use as a mediator between ethnic discrimination and depression symptoms while considering social cohesion as a moderator in the ethnic discrimination-alcohol use link. Gender and annual income were included as covariates given preliminary analyses showing significant differences. Family support was also included as a covariate because of past research suggesting its relationship with main study variables (Mulvaney-Day et al.,

2007). As shown in Table 2, the moderated mediational analyses revealed a significant conditional indirect effect, index = −.05, $SE = .02$, 95% CI [−.11, −.01], such that the mediational effect of alcohol use was influenced by the level of social cohesion. When evaluated at three levels (+1SD, M, −1SD), the conditional indirect effect was statistically significant at low and moderate levels, but not high social cohesion (see Table 2). In other words, the ability of alcohol use to mediate the relationship between ethnic discrimination and depression symptoms was influenced by social cohesion with low and moderate levels showing a stronger indirect effect.

In an attempt to further tease apart these relationships, a separate moderated mediational analysis was conducted examining depression symptoms as the mediator between ethnic discrimination and alcohol use. This alternative model was nonsignificant, index = .004, $SE = .02$, 95% CI [−.04, .03], thus providing further support for the previous results.

Discussion

A growing body of evidence suggests that ethnic discrimination negatively impacts mental health for Latinx individuals. The present study sought to further explore the relationship between discrimination and depression symptoms by examining a moderated mediation model including alcohol use and social cohesion. In general, the study hypotheses were supported and showed that ethnic discrimination was associated with alcohol use, which, in turn, predicted depression symptoms among Latinx adults. The conditional effect suggested that this pathway was influenced by social cohesion, such that low levels showed a stronger indirect effect. In essence, developing neighborhood trust, reciprocity, and collective support formed a buffer against the negative consequences associated with ethnic discrimination.

The major findings support the notion that unhealthy behaviors may strengthen the association between ethnic discrimination and mental health problems (Richman et al., 2018). Specifically, the present study implicates the role of alcohol use as an underlying mechanism that worsens the impact of ethnic-related stress for Latinx adults. Ethnic discrimination has been thought to undermine the ability to self-regulate one's responses and potentially lead to more impulsive behaviors (Richman et al., 2018), thus, potentially contributing to the inability to engage in healthy coping strategies, that may require more cognitive effort. The nonsignificant findings with depression symptoms as the mediator provides further support for this notion. That is, alcohol use in the context of ethnic discrimination may be used to temporarily reduce negative internal experiences (Hawn et al., 2020), but may interfere with emotion regulation, thus contributing to increased depression. Alcohol use and depression likely influence one another in a bidirectional and transactional manner (Johnson et al., 2013), further complicating the inimical effects of ethnic discrimination for Latinx adults.

The current findings also suggest that Latinx individuals with a high sense of social cohesion may be less likely to engage in these unhealthy behaviors (i.e., alcohol use) in relation to ethnic discrimination. Considering the complex effects of ethnic discrimination may help to explain this finding. As a form of social exclusion, ethnic discrimination can impact mental health by interfering with one's ability to become integrated into the environment, access resources, and develop a sense of self within the broader context (Alegría et al., 2017). Scholars have suggested that this sense of

Table 1
Means, Standard Deviations, and Correlations of Study Variables

Study variables	1	2	3	4	5
1. Discrimination	—	−.06	−.14*	.19**	.48***
2. Neighborhood social cohesion		—	.10†	−.15*	−.11†
3. Family support			—	−.10†	−.10†
4. Alcohol use				—	.27***
5. Depression					—
M	1.53	12.21	4.34	2.52	8.80
SD	0.62	5.37	0.67	3.90	5.53
Range	1–5	4–25	1–5	0–25	0–27

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Moderated Mediation Analysis for Ethnic Discrimination, Alcohol Use, Social Cohesion, and Depression Symptoms

Study variables	B	SE B	t
Mediator—Alcohol use			
Predictor: Ethnic discrimination	3.23***	2.26	3.75
Moderator: Social cohesion	.16	.10	1.53
Interaction: Ethnic discrimination × Social cohesion	−.18**	.06	−2.86
Outcome—Depressive symptoms			
Mediator: Alcohol use	.26***	.08	3.38
Predictor: Ethnic discrimination	3.95***	.48	8.31
	Boot ind. effect	Boot SE	95% CI
−1SD	.53	.25	[.15–1.18]
M	.28	.14	[.07–.66]
+1SD	.03	.11	[−.20–.24]

Note. Gender, annual income, and family support were covaried in all analyses. CI = confidence interval.
** $p < .01$.   *** $p < .001$.

confusion or feeling lost may contribute to risky behaviors and attitudes (Schwartz et al., 2006). In fact, a longitudinal study with recently immigrated Latinx adolescents found that being poorly received by the host community can increase positive attitudes toward alcohol use (Grigsby et al., 2018). As such, the current findings supported the notion that social cohesion could serve a protective function even after controlling for family support, a commonly identified resource in Latinx research (Corona et al., 2017; Valdivieso-Mora et al., 2016). That is, participants with high social cohesion showed low levels of alcohol use despite varying levels of ethnic discrimination, while those with low social cohesion reported the most alcohol use in the context of high ethnic discrimination. Social cohesion may give Latinx individuals a greater sense of integration in the community and/or belonging to the broader neighborhood, thus allowing access to alternative resources or forms of support in the face of ethnic-related stressors.

Several limitations are worth noting for the present study. First and foremost, given the correlational and cross-sectional methodology, causal conclusions cannot be made regarding the impact of ethnic discrimination on alcohol use and depression symptoms. Longitudinal studies are warranted to tease apart the temporal relationships between these constructs. Second, the use of surveys is vulnerable to recall bias and social desirability. The present study also did not differentiate different types of ethnic discrimination, such as racial/ethnic microaggressions, which could have varying mental health consequences. In addition, the measure of social cohesion, although conceptualized as a community-level variable, asks for individual's perceptions of their community. Ideally, community-level data that include publicly available neighborhood characteristics, such as crime statistics, poverty rates, or availability of health service providers, can provide assessments of broader indicators likely to influence mental health. As an example, the Area Deprivation Index provides a relative ranking of neighborhood disadvantage based on numerous socioenvironmental variables available by the American Community Survey (Kind & Buckingham, 2018). In this way, empirical research can answer complex questions that occur across multiple systems of functioning. Finally, the majority of the sample identified as being of Mexican descent which, given

the heterogeneity of Latinx subgroups, can limit the generalizability of the findings to the broader community.

Still, several implications can be derived from the major findings. Theoretically, the present study provides further support for frameworks, suggesting that health behaviors underlie the link between ethnic discrimination and mental health, which are conditional on broader community factors (e.g., Pascoe & Smart Richman, 2009; Richman et al., 2018). The integration of individual- and community-level factors provides a more comprehensive perspective of the real-life stressors and resources associated with Latinx mental health. From a practical standpoint, clinicians would be wise to understand alcohol use not only as an outcome, but also a potential driver of further psychological problems, particularly in the context of ethnic discrimination. In addition, clinicians might also consider using informal or formal assessments of social cohesion to better understand how clients/patients perceive their neighborhood connections. Gaining such information would help clinicians develop more balanced conceptualizations of clients' functioning and mental health. On a much larger scale, integrating neighborhood characteristics within intervention and preventions efforts would also be warranted, particularly if they can offset the negative effects of alcohol use.

Future research should continue to explore the influence and interaction of community and individual-level variables among Latinx adults. That is, within traditionally disadvantaged neighborhoods, there may be blocks that contain a strong sense of cohesion and trust which may be associated with health outcomes. Still, individual perceptions are embedded within the neighborhood context and availability of resources which suggest that future research should account for interlocking systems of functioning. Additional neighborhood-level variables to consider might be access to health services or exposure to community violence, both of which would help to better elucidate the context of interpersonal discrimination and systemic inequities. Future research should also continue to explore how perceptions of social cohesion influence mental health, including which aspects of social cohesion are more or less predictive of well-being.

References

Alegría, M., Álvarez, K., & DiMarzio, K. (2017). Immigration and mental health. *Current Epidemiology Reports*, *4*(2), 145–155. https://doi.org/10.1007/s40471-017-0111-2

Almeida, J., Biello, K. B., Pedraza, F., Wintner, S., & Viruell-Fuentes, E. (2016). The association between anti-immigrant policies and perceived discrimination among Latinos in the US: A multilevel analysis. *SSM - Population Health*, *2*, 897–903. https://doi.org/10.1016/j.ssmph.2016.11.003

Andrade, N., Ford, A. D., & Alvarez, C. (2021). Discrimination and Latino health: A systematic review of risk and resilience. *Hispanic Health Care International*, *19*(1), 5–16. https://doi.org/10.1177/1540415320921489

Andresen, E. M., Malmgren, J. A., Carter, W. B., & Patrick, D. L. (1994). Screening for depression in well older adults: Evaluation of a short form of the CES-D (Center for Epidemiologic Studies Depression Scale). *American Journal of Preventive Medicine*, *10*(2), 77–84. https://doi.org/10.1016/S0749-3797(18)30622-6

Arellano-Morales, L., Roesch, S. C., Gallo, L. C., Emory, K. T., Molina, K. M., Gonzalez, P., Penedo, F. J., Navas-Nacher, E. L., Teng, Y., Deng, Y., Isasi, C. R., Schneiderman, N., & Brondolo, E. (2015). Prevalence and correlates of perceived ethnic discrimination in the Hispanic community health study/study of Latinos sociocultural ancillary study. *Journal of Latina/o Psychology*, *3*(3), 160–176. https://doi.org/10.1037/lat0000040

Boden, J. M., & Fergusson, D. M. (2011). Alcohol and depression. *Addiction*, *106*(5), 906–914. https://doi.org/10.1111/j.1360-0443.2010.03351.x

Boutwell, B. B., Nedelec, J. L., Winegard, B., Shackelford, T., Beaver, K. M., Vaughn, M., Barnes, J. C., Wright, J. P., & Stephen, I. D. (2017). The prevalence of discrimination across racial groups in contemporary America: Results from a nationally representative sample of adults. *PLOS ONE*, *12*(8), Article e0183356. https://doi.org/10.1371/journal.pone.0183356

Brondolo, E., Kelly, K. P., Coakley, V., Gordon, T., Thompson, S., Levy, E., Cassells, A., Tobin, J. N., Sweeney, M., & Contrada, R. J. (2005). The perceived ethnic discrimination questionnaire: development and preliminary validation of a community version 1. *Journal of Applied Social Psychology*, *35*(2), 335–365. https://doi.org/10.1111/j.1559-1816.2005.tb02124.x

Carter, R. T., Johnson, V. E., Kirkinis, K., Roberson, K., Muchow, C., & Galgay, C. (2019). A meta-analytic review of racial discrimination: Relationships to health and culture. *Race and Social Problems*, *11*(1), 15–32. https://doi.org/10.1007/s12552-018-9256-y

Chan, J., To, H. P., & Chan, E. (2006). Reconsidering social cohesion: Developing a definition and analytical framework for empirical research. *Social Indicators Research*, *75*(2), 273–302.

Corona, K., Campos, B., & Chen, C. (2017). Familism is associated with psychological well-being and physical health: Main effects and stress-buffering effects. *Hispanic Journal of Behavioral Sciences*, *39*(1), 46–65. https://doi.org/10.1177/0739986316671297

Echeverría, S., Diez-Roux, A. V., Shea, S., Borrell, L. N., & Jackson, S. (2008). Associations of neighborhood problems and neighborhood social cohesion with mental health and health behaviors: The Multi-Ethnic Study of Atherosclerosis. *Health & Place*, *14*(4), 853–865. https://doi.org/10.1016/j.healthplace.2008.01.004

Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2009). Tests of causal links between alcohol abuse or dependence and major depression. *Archives of General Psychiatry*, *66*(3), 260–266. https://doi.org/10.1001/archgenpsychiatry.2008.543

Fone, D., Dunstan, F., Lloyd, K., Williams, G., Watkins, J., & Palmer, S. (2007). Does social cohesion modify the association between area income deprivation and mental health? A multilevel analysis. *International Journal of Epidemiology*, *36*(2), 338–345. https://doi.org/10.1093/ije/dym004

Gilbert, P. A., & Zemore, S. E. (2016). Discrimination and drinking: A systematic review of the evidence. *Social Science & Medicine*, *161*, 178–194. https://doi.org/10.1016/j.socscimed.2016.06.009

Glass, J. E., Williams, E. C., & Oh, H. (2020). Racial/ethnic discrimination and alcohol use disorder severity among United States adults. *Drug and Alcohol Dependence*, *216*, Article 108203. https://doi.org/10.1016/j.drugalcdep.2020.108203

Grigsby, T. J., Forster, M., Meca, A., Zamboanga, B. L., Schwartz, S. J., & Unger, J. B. (2018). Cultural stressors, identity development, and substance use attitudes among Hispanic immigrant adolescents. *Journal of Community Psychology*, *46*(1), 117–132. https://doi.org/10.1002/jcop.21920

Grzywacz, J. G., Alterman, T., Muntaner, C., Shen, R., Li, J., Gabbard, S., & Carroll, D. J. (2010). Mental health research with Latino farmworkers: A systematic evaluation of the short CES-D. *Journal of Immigrant and Minority Health*, *12*(5), 652–658. https://doi.org/10.1007/s10903-009-9311-2

Hawn, S. E., Bountress, K. E., Sheerin, C. M., Dick, D. M., & Amstadter, A. B. (2020). Trauma-related drinking to cope: A novel approach to the self-medication model. *Psychology of Addictive Behaviors*, *34*(3), 465–476. https://doi.org/10.1037/adb0000552

Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.

Hong, S., Zhang, W., & Walton, E. (2014). Neighborhoods and mental health: Exploring ethnic density, poverty, and social cohesion among Asian Americans and Latinos. *Social Science & Medicine*, *111*, 117–124. https://doi.org/10.1016/j.socscimed.2014.04.014

Johnson, T. P., Hughes, T. L., Cho, Y. I., Wilsnack, S. C., Aranda, F., & Szalacha, L. A. (2013). Hazardous drinking, depression, and anxiety among sexual-minority women: Self-medication or impaired functioning? *Journal of Studies on Alcohol and Drugs*, *74*(4), 565–575. https://doi.org/10.15288/jsad.2013.74.565

Kawachi, I., Kennedy, B. P., Lochner, K., & Prothrow-Stith, D. (1997). Social capital, income inequality, and mortality. *American Journal of Public Health*, *87*(9), 1491–1498. https://doi.org/10.2105/ajph.87.9.1491

Kim, J., Kim, J., & Han, A. (2020). Leisure time physical activity mediates the relationship between neighborhood social cohesion and mental health among older adults. *Journal of Applied Gerontology*, *39*(3), 292–300. https://doi.org/10.1177/0733464819859199

Kind, A. J. H., & Buckingham, W. R. (2018). Making neighborhood-disadvantage metrics accessible—The neighborhood atlas. *The New England Journal of Medicine*, *378*(26), 2456–2458. https://doi.org/10.1056/NEJMp1802313

Knight, G. P., Gonzales, N. A., Saenz, D. S., Bonds, D. D., Germán, M., Deardorff, J., & Updegraff, K. A. (2010). The Mexican American cultural values scales for adolescents and adults. *The Journal of Early Adolescence*, *30*(3), 444–481. https://doi.org/10.1177/0272431609338178

Lee, D. L., & Ahn, S. (2012). Discrimination against Latina/os: A meta-analysis of individual-level resources and outcomes. *The Counseling Psychologist*, *40*(1), 28–65. https://doi.org/10.1177/0011000011403326

Mair, C., Roux, A. V. D., Shen, M., Shea, S., Seeman, T., Echeverria, S., & O'meara, E. S. (2009). Cross-Sectional and longitudinal associations of neighborhood cohesion and stressors with depressive symptoms in the multiethnic study of atherosclerosis. *Annals of Epidemiology*, *19*(1), 49–57. https://doi.org/10.1016/j.annepidem.2008.10.002

Miller, W. C., Anton, H. A., & Townson, A. F. (2008). Measurement properties of the CESD scale among individuals with spinal cord injury. *Spinal Cord*, *46*(4), 287–292. https://doi.org/10.1038/sj.sc.3102127

Moore, S., & Kawachi, I. (2017). Twenty years of social capital and health research: A glossary. *Journal of Epidemiology and Community Health*, *71*(5), 513–517. https://doi.org/10.1136/jech-2016-208313

Mulia, N., & Zemore, S. E. (2012). Social adversity, stress, and alcohol problems: Are racial/ethnic minorities and the poor more vulnerable? *Journal of Studies on Alcohol and Drugs*, *73*(4), 570–580. https://doi.org/10.15288/jsad.2012.73.570

Mulvaney-Day, N. E., Alegría, M., & Sribney, W. (2007). Social cohesion, social support, and health among Latinos in the United States. *Social Science & Medicine*, *64*(2), 477–495. https://doi.org/10.1016/j.socscimed.2006.08.030

Murillo, R., Echeverria, S., & Vasquez, E. (2016). Differences in neighborhood social cohesion and aerobic physical activity by Latino subgroup. *SSM-Population Health*, *2*, 536–541. https://doi.org/10.1016/j.ssmph.2016.08.003

Nair, R. L., White, R. M., Roosa, M. W., & Zeiders, K. H. (2013). Cultural stressors and mental health symptoms among Mexican Americans: A prospective study examining the impact of the family and neighborhood context. *Journal of Youth and Adolescence*, *42*(10), 1611–1623. https://doi.org/10.1007/s10964-012-9834-z

Newman, B. J., Shah, S., & Collingwood, L. (2018). Race, place, and building a base: Latino population growth and the nascent Trump campaign for president. *Public Opinion Quarterly*, *82*(1), 122–134.

Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological bulletin*, *135*(4), 531–554. https://doi.org/10.1037/a0016059

Perez, L. G., Arredondo, E. M., McKenzie, T. L., Holguin, M., Elder, J. P., & Ayala, G. X. (2015). Neighborhood social cohesion and depressive symptoms among Latinos: Does use of community resources for physical activity matter? *Journal of Physical Activity & Health*, *12*(10), 1361–1368. https://doi.org/10.1123/jpah.2014-0261

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*(3), 879–891. https://doi.org/10.3758/BRM.40.3.879

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, *42*(1), 185–227. https://doi.org/10.1080/00273170701341316

Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Reyes, L., Treitler, P., & Peterson, N. A. (2021). Testing relationships between racial-ethnic identity, racial-ethnic discrimination, and substance misuse among Black and Latinx older adults in a nationally representative sample. *Research on Aging*. Advance online publication. https://doi.org/10.1177/0164027520986952

Richman, L. S., Pascoe, E. A., & Lattanner, M. (2018). Interpersonal discrimination and physical health. In B. Major, J. F. Dovidio, & B. G. Link (Eds.), *The Oxford handbook of stigma, discrimination, and health* (pp. 1–29). Oxford University Press.

Rios, R., Aiken, L. S., & Zautra, A. J. (2012). Neighborhood contexts and the mediating role of neighborhood social cohesion on health and psychological distress among Hispanic and non-Hispanic residents. *Annals of Behavioral Medicine*, *43*(1), 50–61. https://doi.org/10.1007/s12160-011-9306-9

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science*, *277*(5328), 918–924. https://doi.org/10.1126/science.277.5328.918

Saunders, J. B., Aasland, O. G., & World Health Organization. (1987). *WHO collaborative project on the identification and treatment of persons with harmful alcohol consumption. Report on phase I: The development of a screening instrument* (No. WHO/MNH/DAT/86.3. Unpublished).

Schwartz, S. J., Montgomery, M. J., & Briones, E. (2006). The role of identity in acculturation among immigrant people: Theoretical propositions, empirical questions, and applied recommendations. *Human Development*, *49*(1), 1–30. https://doi.org/10.1159/000090300

Vaeth, P. A., Caetano, R., & Canino, G. (2019). Neighborhood factors, drinking behavior, and alcohol use disorder in San Juan, Puerto Rico. *American Journal of Orthopsychiatry*, *89*(5), 579–588. https://doi.org/10.1037/ort0000402

Vaeth, P. A., Caetano, R., & Mills, B. A. (2015). Binge drinking and perceived neighborhood characteristics among Mexican Americans residing on the US–Mexico border. *Alcoholism: Clinical and Experimental Research*, *39*(9), 1727–1733. https://doi.org/10.1111/acer.12818

Valdivieso-Mora, E., Peet, C. L., Garnier-Villarreal, M., Salazar-Villanea, M., & Johnson, D. K. (2016). A systematic review of the relationship between familism and mental health outcomes in Latino population. *Frontiers in Psychology*, *7*, Article 1632. https://doi.org/10.3389/fpsyg.2016.01632

Vega, W. A., Ang, A., Rodriguez, M. A., & Finch, B. K. (2011). Neighborhood protective effects on depression in Latinos. *American Journal of Community Psychology*, *47*(1–2), 114–126. https://doi.org/10.1007/s10464-010-9370-5

Webb Hooper, M., Nápoles, A. M., & Pérez-Stable, E. J. (2020). COVID-19 and racial/ethnic disparities. *Journal of the American Medical Association*, *323*(24), 2466–2467. https://doi.org/10.1001/jama.2020.8598

Williams, D. R., Lawrence, J. A., & Davis, B. A. (2019). Racism and health: evidence and needed research. *Annual review of public health*, *40*, 105–125. https://doi.org/10.1146/annurev-publhealth-040218-043750

Williams, D. R., Spencer, M. S., & Jackson, J. S. (1999). Race, stress, and physical health. In R. J. Contrada & R. D. Ashmore (Eds.), *Self, social identity, and physical health: Interdisciplinary explorations* (pp. 71–100). Oxford University Press.