



Effects of Neighborhood Disconnection on Psychological Distress and Suicide Risk Associated with Interpersonal Violence Within Racial Groups

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Abstract

Negative mental health outcomes have been associated with adverse childhood experiences (ACEs) and intimate partner violence (IPV); however, few studies have identified risk and protective factors across levels of the social ecology that mitigate the onset of psychological distress and suicide risk associated with trauma. This study examines the relationship between ACEs, IPV, and mental health (i.e., psychological distress, suicidal ideation, and suicide attempts) within racial sub-populations of Black American, Latinx, and White adults. An online, cross-section survey was administered to a general population sample of adults in Baltimore and New York City. ACEs, IPV, and mental health outcomes were assessed within racial sub-populations of Black American (N = 390), Latinx (N = 178), and White (N = 339) adults, while accounting for within-group demographic differences. Moderating effects of social support and neighborhood disconnection on the relationship between ACEs, IPV, and mental health outcomes were also assessed. IPV was associated with psychological distress and suicidal ideation for Black and Latinx adults, but not for White adults. ACEs were associated with increased psychological distress for all three groups, and increased odds for suicidal ideation among Black and Latinx adults. A significant negative interaction effect for neighborhood disconnection was found in the relationship between ACEs and psychological distress for Black adults. Findings highlight the significant mental health burdens of ACEs and IPV within racial and ethnic groups. Neighborhood disconnection may exacerbate psychological distress associated with ACEs among populations most impacted by interpersonal violence and mental health inequalities.

Keywords Adverse childhood experiences · Intimate partner violence · Neighborhood disconnection · Suicide · Race and ethnicity

Introduction

Adverse childhood experiences and intimate partner violence are pressing public health concerns in the United States that have been linked to serious long-term health

and mental health consequences (Felitti et al., 1998; Smith et al., 2018). Adverse childhood experiences (ACEs) are potentially traumatic events occurring from ages 0 to 17, and include experiences of physical, sexual, or emotional abuse, witnessing violence in the home, or having a family member with mental health or substance abuse problems, among others (Merrick et al., 2018). Approximately 62% of adults have experienced at least one ACE and nearly 1 in 4 (24.6%) adults experienced three or more ACEs during childhood (Merrick et al., 2018). Intimate partner violence (IPV), characterized by physical, sexual, and psychological-based victimization, affects 1 in 3 women and men in the U.S. (Smith et al., 2018). Although ACEs and IPV are common in the adult U.S. population, the burden of these forms of violence are not equally shared across demographic groups.

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Data from the Centers for Disease Control and Prevention (CDC) identify higher rates of ACEs among adults who identify as Black or African American, Latinx, and lesbian, gay, or bisexual (LGB) compared to White non-Hispanic adults and those who identify as heterosexual (Merrick et al., 2018). Similarly, nationally representative surveys have found that populations of women of color (i.e., Black or African American, Indigenous, multiracial) experience elevated rates of IPV compared to White women (Black et al., 2011; Rosay, 2016) as well as women who identify as bisexual compared to heterosexual and lesbian women (Walters et al., 2013). Disparities in ACEs and IPV can be attributed to systemic inequalities and barriers that historically marginalized and underserved communities in areas such as education, employment, housing, and healthcare, among others (Bent-Goodley, 2007; Bruner, 2017; Decker et al., 2005; Rodríguez et al., 2009).

A range of negative mental health outcomes (e.g., depression, PTSD, suicidality) in both clinical and general population samples have been associated with ACE and IPV exposure (Baglivio et al., 2014; Edwards et al., 2009; Manyema et al., 2018; Willie et al., 2018). Much of the existing literature has been conducted on primarily White samples of adults and few studies have adequately accounted for within-racial group differences based on sexual orientation, gender identity, and other demographic factors (e.g., income, education) that have been linked to population disparities in ACEs and IPV. Furthermore, identifying risk and protective factors across levels of the social ecology (e.g., individual, peer/family, community/neighborhood) can lessen the risk of mental health problems associated with interpersonal violence, but few studies have measured factors related to one's community or neighborhood (Eriksson et al., 2018; Sabina & Banyard, 2015). Supportive neighborhood mechanisms (e.g., collective efficacy, social cohesion, social networks) have been found to positively influence mental health symptoms associated with IPV (Wright et al., 2015), as having a strong sense of belonging to one's neighborhood can foster feelings of hope, self-worth, and belief in one's ability to cope with adversity. Alternatively, having a weak sense of belonging to one's neighborhood can negatively influence mental health (Scheuermann et al., 2020; Silva et al., 2022; Smith et al., 2020), and may exacerbate mental health symptoms among those with histories of interpersonal violence. Relatedly, neighborhood disconnection may impede the wellbeing and safety of individuals who are currently experiencing IPV in their homes, as victims of IPV may turn to neighbors for help and support. However, more research is needed to examine how neighborhood disconnection affects mental health symptoms associated with interpersonal violence, including understanding this relationship within racial and ethnic populations.

Using data from a demographically diverse, urban general population sample, this study investigates associations between ACEs, IPV, and mental health problems (i.e., psychological distress, suicidal ideation, and suicide attempts) within racial sub-populations of Black, Latinx, and White adults while accounting for within-group demographic differences. Factors related to the individual (e.g., demographics), one's peer/family (i.e., social support), and one's neighborhood (i.e., neighborhood disconnection) are assessed. Analyses also account for the moderating effect of neighborhood disconnection in the relationship between ACEs and IPV and mental health outcomes within racial groups. Understanding the effects of risk and protective factors related to individual, peer/family, and neighborhood contexts within racial sub-populations can help to develop and promote equitable, tailored interventions for violence and suicide prevention.

ACEs, IPV, and Mental Health Outcomes

ACEs have been associated with negative mental health outcomes later in life in general population-based and nationally representative samples (Baglivio et al., 2014; Nurius et al., 2015; Thompson et al., 2019; Willie et al., 2018). This research also indicates that the higher the number of ACEs experienced during childhood, the greater the risk for psychological distress and anxiety (Edwards et al., 2003; Mersky et al., 2013) depressive disorder (Wise et al., 2001), and suicidal behavior (Bruffaerts et al., 2010) in adulthood.

IPV in adulthood is also linked to subsequent mental health problems (Devries et al., 2013; Golding, 1999; Manyema et al., 2018; Wingood et al., 2000). Although the majority of this research has been conducted on samples of women, research suggests similar patterns for men who have experienced IPV (Dufort et al., 2015; Randle & Graham, 2011). Additionally, in a meta-analysis of longitudinal studies, Castellví et al. (2017) found that participants exposed to child maltreatment had 2.25 times the odds of a subsequent suicide attempt and those exposed to IPV had 1.99 times the odds of a suicide attempt, compared to those without child maltreatment and IPV histories. This suggests that childhood trauma may have unique effects on mental health symptoms and suicidal behavior later in life. However, few studies have adequately measured both ACEs and IPV in relation to mental health symptoms, which is needed to examine the independent effects of these forms of violence on psychological distress and suicide risk.

Prior studies that include samples of racial/ethnic minority populations document similar patterns linking ACEs, IPV, and clinically significant mental health symptoms in samples of women with abuse histories (Leiner et al., 2008; Thompson et al., 1999). Like ACEs, research on IPV and

mental health outcomes suggests a dose-response relationship. For example, in a study of African American women visiting the Emergency Department, women who experienced one, two, or three types of IPV had 2.4, 3.1, and 5.9 times the odds, respectively, of reporting depressive symptoms (Houry et al., 2006). The extant literature on ACEs and IPV within racial minority groups also appears to suggest that the mental health burdens of violence are not equally distributed within the population. In a demographically diverse probability sample, Caetano and Cunradi (2003) found that Latina (38%) and Black (30%) women exposed to IPV reported significantly higher levels of severe depression followed by White (20%) women exposed to IPV.

While ACEs and IPV have been linked to overall increased psychological distress and suicidal thoughts and behaviors, it is important to assess this relationship within racial and ethnic groups to adequately account for within-group differences based on other demographic factors including gender, sexual orientation, and socioeconomic factors (i.e., income, education), which may in part explain racial, gender, and sexual disparities in both violence and mental health symptoms.

Social Support and Neighborhood Disconnection

Social support may serve as a protective factor against psychological distress and suicidality associated with ACEs and IPV. The concept of social support is related to both perceived and actual interpersonal support (Haber et al., 2007) and has been shown to be a key protective factor for those who have experienced trauma. Additionally, the size of one's social network has been associated with greater resilience among individuals exposed to trauma, such that larger social support networks increase resilience associated with trauma exposure (Mancini & Bonanno, 2009). Much of the research on social support and related constructs has examined its effects on mental health symptoms associated with IPV among women, suggesting that greater social support - measured as the size of a social network, the frequency of contacts, and the quality of emotional support from social support sources, decrease depression, anxiety, and PTSD symptoms (Coker et al., 2003; Mburia-Mwalili et al., 2010). Similar patterns have been found for ACEs, such that inadequate social support leads to exacerbated mental health symptoms associated with trauma. For example, Von Cheong et al. (2017) found in a sample of middle-aged adults, that exposure to at least one ACE yielded three times the odds of experiencing depressive symptoms among those with low social support. Low levels of social support among individuals with ACE histories may in turn increase risks for experiencing mental health problems (Liu et al., 2013). While informal sources of support (e.g., friends, family) play a key role in lending emotional support to

survivors of IPV and childhood trauma, informal sources can also link survivors to needed sources of formal help (e.g., counseling, healthcare, legal and other social services) and are positioned to increase a person's access to these critical resources.

While a large body of work has identified social support as a key protective factor against negative mental health symptoms associated with ACEs and IPV, less research has examined how connection or a sense of belonging to one's neighborhood influences the relationship between ACEs, IPV, and mental health outcomes. Neighborhood connection, apart from individual relationships (e.g., friends, family members) through which people draw on for social support, may also impact mental health outcomes associated with violence. Prior studies have assessed supportive neighborhood mechanisms on mental health symptoms, such as perceptions of collective efficacy and social cohesion, which have been found to positively influence mental health symptoms (Ahren & Galea, 2011; Wright et al., 2015). For example, in a sample of residents living in Arizona, researchers found that neighborhood social cohesion significantly predicted both physical and mental health and mediated the relationship between neighborhood socioeconomic level, ethnic composition, and health outcomes (Rios et al., 2012). Alternatively, low levels of neighborhood social cohesion and weak neighborhood social ties have been strongly associated with negative physical and mental health outcomes (Kawachi & Berkman, 2001; Thoits, 2011). In a national sample of Latino adults, Silva et al. (2022) found that lower levels of neighborhood belonging were associated with thoughts of death among depressed participants. Relatedly, feelings of alienation or discrimination within neighborhoods has been linked to increased psychological distress and overall poor health outcomes (Scheuermann et al., 2020; Smith et al., 2020). Overall, the extant literature highlights several related neighborhood mechanisms (e.g., social cohesion, collective efficacy, sense of belonging) that can serve as risk or protective factors against mental health symptoms; however, this research has not fully explored these factors in relation to ACE and IPV exposure, particularly within demographically diverse general population samples. It is possible that neighborhood disconnection may exacerbate mental health symptoms associated with ACEs and IPV and negatively affect the wellbeing and safety of individuals who are currently experiencing IPV at home. Further, neighborhood residents are uniquely positioned to help survivors and can create a supportive neighborhood environment for families experiencing IPV. It is unclear, however, whether neighborhood disconnection affects mental health symptoms associated with interpersonal violence and within specific racial and ethnic populations, accounting for other factors across the social ecology.

Theoretical Framework

The current study integrates frameworks from ecological and intersectional, Black feminist perspectives to understand the interplay among factors associated with ACEs, IPV, and mental health within racial and ethnic groups. Intersectionality uses an analysis of power, privilege, and oppression at the individual and structural levels and emphasizes the role that racism and other forms of oppression (e.g., sexism, classism, heterosexism), in the perpetuation of violence (Bilge, 2013; Crenshaw, 1993; Collins & Bilge, 2020; Luft et al., 2009). An intersectional framework that foregrounds structural inequality helps us to understand why ACEs and IPV – which are common and occur across social strata – occur with greater frequency in the families and communities of those from historically marginalized groups. Social policies aimed at privileging and protecting members of dominant groups create inequities in economic opportunity between groups, uphold discrimination in institutions (e.g., education, criminal justice) and systems of care (e.g., social service, healthcare), and limit individual, family, and community access to resources and supports that promote wellbeing. Empirical studies have demonstrated the ways in which structural barriers and inequities affect survivors of trauma and IPV, particularly when seeking help from formal institutions and systems of care (Sabina & Banyard, 2015; Satyen et al., 2019). Women of color often face discrimination and stereotyping from professionals in formal systems and face additional barriers depending on their immigration status, citizenship status, disability status, among other factors that determine one's social location or positioning (Bent-Goodley, 2007; Collins & Blige, 2020; Crenshaw, 1993).

In addition, we draw on the ecological model to identify hypothesized factors related to the individual, peer/family, and community/neighborhood that influence experiences of ACEs, IPV, and mental health. The widely cited ecological model widens the domains of influence on ACEs, IPV, and mental health to include multiple levels of social organization, including individual, relational, community, and societal levels (Ali & Naylor, 2013; Bronfenbrenner, 1977; Heise, 1998) and elucidates risk and protective factors against violence, including those that mitigate poor mental health outcomes associated with ACEs and IPV. Given its emphasis on the interaction between levels, the ecological model refers to a confluence of risks for violence that are ecologically nested, and defies a single point of origin such as an individual propensity for violence or one's socioeconomic status (Labarre et al., 2019). Individual-level factors related to group membership including lower socioeconomic status (Capaldi et al., 2012; Cunradi et al., 2002); racial/ethnic minority identity (Ramisetty-Mikler et al., 2007; Sonis & Langer, 2008); sexual and gender minority identity (Barros et al., 2019; Capaldi et al., 2012; Goldberg & Meyer, 2013); and having

a disability (Breiding & Armour, 2015) are associated with increased likelihood of experiencing IPV compared to members of dominant groups. Factors at the relational, family, or peer-level such as the quality of one's relationships and social support, have been identified as an important protective factor in mitigating adverse health and mental consequences associated with ACEs and IPV (Coker et al., 2002; Mburia-Mwalili et al., 2010). Neighborhood influences, such as perceptions of collective efficacy, social cohesion, or connectedness to one's neighborhood have been linked to both reduced violence and decreased psychological distress, suicidal ideation, and suicide attempts symptoms (Hill & Maimon, 2013; Lim et al., 2012). Therefore, it is necessary to examine factors across levels of the social ecology to provide a more comprehensive understanding of the dynamic processes involved in ACEs, IPV, and mental health within specific racial and ethnic populations.

Current Study

This study examines the relationship between ACEs, IPV, and mental health (i.e., psychological distress, suicidal ideation, and suicide attempts) within racial sub-populations of Black American, Latinx, and White adults while accounting for within-group demographic differences. Specifically, we address two research questions: 1) what is the nature of the association between ACEs, IPV, and mental health symptoms when accounting for other risk and protective factors at individual (i.e., demographics), peer/family (i.e., social support), and neighborhood levels (i.e., neighborhood disconnection) within racial groups; and 2) does neighborhood disconnection moderate the relationship between ACEs, IPV, and mental health symptoms within racial groups? We also included social support as a moderator in the analyses, given prior findings on social support as a key protective factor (e.g., Coker et al., 2003; Mburia-Mwalili et al., 2010). Based on prior studies of mental health outcomes associated with ACEs and IPV, we hypothesized that ACEs and IPV exposure would be significantly associated increased psychological distress and risk for suicidal ideation and suicide attempts for all racial groups. We also hypothesized that social support and neighborhood disconnection would moderate the relationship between ACE and IPV exposure and mental health symptoms; however, given the lack of research that has comprehensively assessed risk and protective factors across levels of social ecology, including within racial groups, we were uncertain what the nature of these relationships would be. For example, whether one or both hypothesized moderators (i.e., social support and neighborhood disconnection) would influence some mental health symptoms but not others (e.g., distress versus suicide attempts) and for which racial groups would demonstrate these effects. Thus, we did not advance hypotheses for this exploratory component of the study.

Method

Study Design and Sample

Data from the second Survey of Police-Public Encounters (SPPE II) were used for the current study. SPPE II is an online, cross-sectional, general population survey administered in March 2017 to English-speaking adult residents of Baltimore City and New York City (DeVylder et al., 2018). Participants were recruited using Qualtrics Panels, an online sampling service comprised of several million U.S. residents who consent to participate in survey research. Qualtrics Panels uses a quota sampling methodology to recruit demographically matched and census-representative samples (i.e., $\pm 10\%$ of 2010 census distributions for age, sex, and race/ethnicity within each city) based on geographic household data. Monetary incentives were provided to participants who completed the survey at rates determined by Qualtrics based on the difficulty in acquiring the target population. Participants were provided with details on the purpose of the study. Informed consent was obtained from participants by their agreement to proceed to complete the online survey. A total of 1,221 adults agreed to participate in the survey. A total of 221 respondents were excluded from the final sample due to incorrectly responding to attention checks and discontinuation of the survey prior to completion. The final sample size was 1,000 (81.9% participation rate). For the purposes of this study, participants who self-identified their race/ethnicity as Black or African American ($N=390$), Latinx ($N=178$), and White non-Hispanic ($N=339$) were included in data analyses. Study procedures received Institutional Review Board (IRB) approval from the sponsoring university and a waiver for written consent was granted.

Measures

Psychological Distress The K6 was used to assess clinically significant psychological distress symptoms in the past four weeks (Kessler et al., 2003). The K6 scale uses 5-point Likert response options. Items were summed and averaged, where higher scores indicate greater levels of distress (scores range from 0 to 24). Internal consistency reliability of the K6 in this sample was excellent ($\alpha = .91$).

Suicidal Ideation Past-year suicidal ideation was assessed with the indicator “In the past 12 months, have you ever seriously thought about committing suicide?” (Miller et al., 2015). Response options included “yes”, “no”, or “unsure”, and were recoded into a dichotomous variable (“yes” or “no”). Responses of “unsure” were recoded as “yes” to consider under-reporting of suicidal ideation (Klonsky et al., 2016; Prinstein, 2008).

Suicide Attempt Past-year suicide attempt was assessed with the indicator “In the past 12 months, have you attempted suicide?” (Miller et al., 2015). Response options included “yes”, “no”, or “unsure”, and were recoded into a dichotomous variable (“yes” or “no”). Responses of “unsure” were recoded as “yes” to consider under-reporting of suicidal behavior (Klonsky et al., 2016; Prinstein, 2008).

Social Support Social support was measured with the following indicator assessing the size of one’s social network: “How many people do you have near you that you can readily count on for help in times of difficulty such as to watch over children or pets, give rides to the hospital or store, or help when you are sick?” Response options provide five categories (1 = 0, 2 = 1, 3 = 2 to 5, 4 = 6 to 10, 5 = more than 10).

Neighborhood Disconnection The neighborhood disconnection sub-scale from the Neighborhood Change and Gentrification Scale is comprised of 6 items assessing one’s feelings of community connectedness within their neighborhood (DeVylder, Fedina, & Jun, 2019). Example items include “I worry about feeling ‘unwelcome’ in my neighborhood” and “I have observed changes to the sense of ‘community’ in the neighborhood.” Higher scores indicate higher levels of neighborhood disconnection. Internal consistency reliability of the measure was acceptable in this sample ($\alpha = .83$).

Adverse Childhood Experiences The 10-item ACE questionnaire developed to assess exposure to childhood abuse and trauma before the age of 18 was used to assess ACE exposure (Felitti et al., 1998). Each ACE indicator was summed into a single continuous variable ranging from 0 (no exposure) to 10 (exposure to all). Internal consistency reliability was acceptable in this sample ($\alpha = .83$).

Intimate Partner Violence Victimization Intimate partner violence (IPV) victimization was assessed with 15 indicators from the Centers for Disease Control and Prevention (CDC) National Intimate Partner and Sexual Violence Survey (NISVS) measuring lifetime physical, sexual, and psychological violence victimization by a romantic or sexual partner (NISVS General Population Survey Raw Data). Each IPV indicator was summed into a single continuous variable ranging from 0 (no exposure) to 15 (exposure to all). Internal consistency reliability was excellent in this sample ($\alpha = .94$).

Demographics Demographic variables included age, household income (in \$20,000 increments, up to \$100,000+), education level (< high school, high school diploma or G.E.D., some college or technical school, college graduate, graduate or professional degree), gender identity (cisgender male or cisgender female), and sexual orientation (lesbian/gay/

bisexual or heterosexual). A total of 6 participants who identified as transgender or non-binary across the entire sample were excluded from the analysis given very small sample sizes within racial groups. Race/ethnicity was assessed as a mutually exclusive variables identified the following racial/ethnic groups: non-Hispanic Black, Latinx, and non-Hispanic White.

Data Analyses

A series of ordinary least squares (for psychological distress outcomes) and logistic regressions (for suicidal ideation and suicide attempt outcomes) were conducted to examine the relationship between ACEs and IPV and mental health symptoms within Black, Latinx, and White samples. Interaction terms were included in analyses to test moderating effects of neighborhood disconnection in the relationship between ACEs and IPV and mental health symptoms. We also included interaction terms for social support to assess potential moderating effects of social support in the relationship between ACEs and IPV and each mental health outcome given prior study findings on moderating effects of social support (e.g., Coker et al., 2002). There were no missing data for study variables due to the use of forced choice responding during survey administration. All analyses were tested at a significance level of .05 ($\alpha = .05$, two-tailed) using Stata Version 16.1.

A power analysis was conducted using G*Power (Faul et al., 2009) to calculate the achieved power for each of the three samples: Black/African American ($n = 390$), Latinx ($n = 178$), and White ($n = 339$). Cohen's (1977) recommended effect sizes were used for the assessment: small ($f^2 = .02$), medium ($f^2 = .15$), and large ($f^2 = .35$). A 9-predictor variable equation was used as a baseline and tested at an alpha level of $p < .05$. Results indicated that statistical power to detect medium and large effect sizes exceeded .99 for Black, Latinx, and White samples. Statistical power to detect a small effect for the Black sample was .80, for the Latinx sample was .47, and for the White sample was .74. Statistical power was more than adequate (power = .80) at medium and large effect sizes for all groups, but less than adequate power at small effect sizes for Latinx and White groups.

Results

Sample Description and Bivariate Statistics

Sample descriptive statistics for demographics, violence exposure, and mental health symptoms are presented in Table 1 for each racial/ethnic group. Pearson correlations were assessed between all study variables within each

racial/ethnic group and are presented in Tables 2, 3, and 4. At the bivariate level, ACEs and IPV were positively correlated with psychological distress, suicidal ideation, and suicide attempts for Black, Latinx, and white participants. For Black participants, neighborhood disconnection was positively correlated with psychological distress, but not suicide attempts or suicidal ideation. For Latinx participants, neighborhood disconnection was positively correlated with psychological distress, suicide attempts, and suicidal ideation. For white participants, neighborhood disconnection was positively correlated with psychological distress and suicide attempts, but not suicidal ideation. Social support was not significantly correlated with psychological distress, suicidal ideation, and suicide attempts for any racial/ethnic group.

Black Participants

Regression results for Black participants are presented in Table 5. ACEs and IPV were significantly associated with higher levels of psychological distress ($B = .48$, 95% CI = .24, .71; $B = .28$, 95% CI = .13, .43, respectively), controlling for other variables. Neighborhood disconnection was significantly associated with higher levels of psychological distress ($B = 1.44$, 95% CI = .82, 2.06), and moderated the relationship between ACEs and distress symptoms. Interaction effects between neighborhood disconnection and ACEs indicate that the higher the level of neighborhood disconnection the greater the effect of ACEs on psychological distress ($B = .34$, 95% CI = .12, .57) (see Figure 1). The F-test was used to confirm significant interaction effects ($F = 5.21$, $p < .05$). Neighborhood disconnection did not moderate the relationship between IPV and distress symptoms. Social support was not significantly associated with psychological distress in the models and did not moderate the relationship between ACEs, IPV, and distress symptoms. Notably, lesbian/gay/bisexual Black participants had increased levels of psychological distress compared to heterosexual participants ($B = 1.75$, 95% CI = .03, 3.48).

In the model predicting suicidal ideation among Black participants, those with ACEs and IPV exposures had higher odds of past-year suicidal ideation than those without exposures (OR = 1.28, 95% CI = 1.11, 1.47; OR = 1.10, 95% CI = 1.01, 1.20, respectively), after accounting for sociodemographics, social support, and neighborhood disconnection. Neighborhood disconnection and social support were not significantly associated with suicidal ideation among Black participants. No moderation effects were found for social support or neighborhood disconnection in the relationship between ACE and IPV exposure and suicidal ideation.

Table 1 Sample Description of Demographic Characteristics and Study Variables

| Study Variable | Black <i>N</i> = 390 <i>n</i> (%) | Latinx <i>N</i> = 178 <i>n</i> (%) | White <i>N</i> = 339 <i>n</i> (%) |
|---|---|--|---|
| Age (<i>M</i> , <i>SD</i>) | 35.99, 12.77 | 33.82, 11.99 | 48.49, 15.75 |
| Gender | | | |
| Male | 173 (44.4) | 66 (37.1) | 123 (36.3) |
| Female | 216 (55.4) | 110 (61.8) | 215 (63.4) |
| Transgender/non-conforming | 1 (.3) | 2 (1.1) | 1 (.3) |
| Sexual orientation | | | |
| Heterosexual | 348 (89.2) | 157 (88.2) | 319 (94.1) |
| Gay/Lesbian/Bisexual | 42 (10.8) | 21 (11.8) | 20 (5.9) |
| Annual household income | | | |
| <20,000 | 110 (28.2) | 35 (19.17) | 46 (13.6) |
| 20,000–39,999 | 100 (25.6) | 40 (22.5) | 57 (16.8) |
| 40,000–59,999 | 72 (18.5) | 33 (18.5) | 73 (21.5) |
| 60,000–79,999 | 46 (11.8) | 27 (15.2) | 48 (14.2) |
| 80,000–99,999 | 26 (6.7) | 15 (8.4) | 37 (10.9) |
| >100,000 | 36 (9.2) | 28 (15.7) | 78 (23) |
| Education | | | |
| <High school | 18 (4.6) | 8 (4.5) | 10 (2.9) |
| High school / GED | 133 (34.1) | 46 (25.8) | 63 (18.6) |
| Some college / tech | 119 (30.5) | 48 (27.0) | 92 (27.1) |
| College graduate | 87 (22.3) | 55 (30.9) | 112 (33.0) |
| Grad/professional | 33 (8.5) | 21 (11.8) | 62 (18.3) |
| Interpersonal violence | | | |
| Any ACE exposure | 256 (65.6) | 103 (57.9) | 162 (47.8) |
| Total ACE exposure (<i>M</i> , <i>SD</i>) | 2.24, 2.56 | 2.13, 2.68 | 1.45, 2.10 |
| Any IPV exposure | 202 (51.8) | 83 (46.6) | 148 (43.7) |
| Total IPV exposure (<i>M</i> , <i>SD</i>) | 2.79, 3.91 | 3.11, 4.37 | 2.59, 3.93 |
| Social support (<i>M</i> , <i>SD</i>) | 2.67, .84 | 2.66, .87 | 2.70, .83 |
| Neighborhood disconnection (<i>M</i> , <i>SD</i>) | 2.51, .86 | 2.88, .91 | 2.53, .87 |
| Psychological distress (<i>M</i> , <i>SD</i>) | 6.22, 6.11 | 6.65, 6.75 | 4.91, 5.53 |
| Suicidal ideation | 39 (10.0) | 27 (15.2) | 19 (5.6) |
| Suicide attempt | 12 (3.1) | 11 (6.2) | 4 (1.2) |

In the model predicting suicide attempts, those with IPV exposure had higher odds of past-year attempts ($OR = 1.19$, $95\% CI = 1.04, 1.36$) compared to those without IPV exposure. ACEs, social support, and neighborhood disconnection were not associated with suicide attempts among Black participants (see Table 2). No moderation effects were found for social support or neighborhood disconnection in the relationship between ACE and IPV exposure and suicide attempts.

Latinx Participants

Regression results for Latinx participants are presented in Table 6. Among Latinx participants, ACE and IPV exposures were significantly associated with higher levels of psychological distress ($B = .53$, $95\% CI = .16, .91$; $B = .50$, $95\% CI = .27, .72$, respectively), controlling for other variables.

Greater neighborhood disconnection was significantly associated with higher levels of psychological distress ($B = 1.35$, $95\% CI = .45, 2.24$). Neighborhood disconnection did not significantly moderate the relationship between ACE and IPV exposures and distress symptoms among Latinx participants. Social support was not significantly associated with psychological distress in the models and did not moderate the relationship between ACEs, IPV, and distress symptoms.

In the model predicting suicidal ideation, ACEs and IPV were associated with higher odds of past-year ideation, controlling for other variables ($OR = 1.24$, $95\% CI = 1.02, 1.52$; $OR = 1.14$, $95\% CI = 1.01, 1.29$, respectively). Latinx participants with higher levels of neighborhood disconnection had over twice the odds of past-year ideation ($OR = 2.61$, $95\% CI = 1.40, 4.88$) compared to those with lower levels of neighborhood disconnection. Neighborhood disconnection

Table 2 Bivariate Pearson Correlations for Black Participants

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------------------------|---|--------|--------|--------|---------|---------|---------|--------|--------|---------|---------|--------|
| 1 Age | 1 | 0.14** | 0.13* | 0.03 | -0.14** | -0.09 | -0.12* | 0.00 | -0.08 | -0.25** | -0.19** | -0.08 |
| 2 Income | | 1 | 0.50** | 0.07 | -0.13* | -0.21** | -0.08 | 0.13** | -0.12* | -0.18** | -0.05 | -0.01 |
| 3 Education | | | 1 | 0.16** | -0.04 | -0.20** | -0.15** | 0.07 | -0.08 | -0.21** | -0.05 | -0.04 |
| 4 Gender | | | | 1 | 0.15** | 0.04 | 0.11* | 0.00 | -0.04 | 0.01 | 0.08 | 0.04 |
| 5 Sexual orientation | | | | | 1 | 0.05 | 0.07 | -0.02 | 0.02 | 0.14** | 0.11* | 0.08 |
| 6 ACEs | | | | | | 1 | 0.44** | -0.06 | 0.12* | 0.36** | 0.29** | 0.15** |
| 7 IPV | | | | | | | 1 | -0.03 | 0.14** | 0.34** | 0.27** | 0.22** |
| 8 Social support | | | | | | | | 1 | -0.11* | -0.08 | 0.01 | 0.04 |
| 9 Neighborhood disconnection | | | | | | | | | 1 | 0.29** | 0.05 | -0.03 |
| 10 Psychological distress | | | | | | | | | | 1 | 0.40** | 0.17** |
| 11 Suicidal ideation | | | | | | | | | | | 1 | 0.39** |
| 12 Suicide attempt | | | | | | | | | | | | 1 |

p* < .05; *p* < .01; ****p* < .001

did not moderate the relationship between IPV and ACEs and suicidal ideation among Latinx participants. Social support was not significantly associated with suicidal ideation in the model and did not moderate the relationship between ACEs, IPV, and distress symptoms. There were no significant variables in the model predicting suicide attempts among Latinx participants (see table 4).

White non-Hispanic Participants

Regression results for White participants are presented in Table 7. Among White participants, ACEs were significantly associated with higher levels of psychological distress, after controlling for other variables (*B* = .45, 95% CI = .17, .74). White participants with greater neighborhood disconnection reported higher levels of psychological distress (*B* = 1.08, 95% CI = .44, 1.72), controlling for other variables.

Neighborhood disconnection did not significantly moderate the relationship between ACE exposure and distress symptoms. IPV was not associated with psychological distress, after controlling for other variables in the model. Social support was not significantly associated with psychological distress in the models and did not moderate the relationship between ACEs, IPV, and distress symptoms.

In the model predicting suicidal ideation among White participants, IPV, ACEs, social support, and neighborhood disconnection were not associated with past-year ideation. Neighborhood disconnection did not moderate the relationship between ACEs, IPV, and suicidal ideation. Social support was not significantly associated with psychological distress in the models and did not moderate the relationship between ACEs, IPV, and distress symptoms. Sexual orientation was significantly associated with suicidal ideation such that White participants who identified as lesbian/gay/

Table 3 Bivariate Pearson Correlations for Latinx Participants

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------------------------|---|--------|--------|-------|-------|-------|--------|--------|--------|---------|--------|--------|
| 1 Age | 1 | 0.24** | 0.11 | -0.14 | -0.10 | -0.04 | 0.01 | -0.05 | -0.16* | -0.30** | -0.13 | -0.004 |
| 2 Income | | 1 | 0.51** | -0.13 | -0.07 | 0.004 | 0.04 | 0.27** | -0.12 | -0.19* | -0.11 | 0.04 |
| 3 Education | | | 1 | 0.02 | -0.08 | 0.01 | 0.01 | 0.36** | -0.08 | -0.11 | -0.02 | 0.08 |
| 4 Gender | | | | 1 | 0.11 | 0.11 | 0.08 | -0.01 | 0.03 | 0.02 | 0.08 | -0.09 |
| 5 Sexual orientation | | | | | 1 | 0.14 | 0.03 | -0.04 | -0.02 | 0.16* | 0.14 | -0.02 |
| 6 ACEs | | | | | | 1 | 0.60** | -0.02 | 0.15* | 0.45** | 0.39** | 0.36** |
| 7 IPV | | | | | | | 1 | -0.01 | 0.16* | 0.46** | 0.36** | 0.34** |
| 8 Social support | | | | | | | | 1 | -0.01 | 0.02 | 0.02 | 0.02 |
| 9 Neighborhood disconnection | | | | | | | | | 1 | 0.31** | 0.29** | 0.18* |
| 10 Psychological distress | | | | | | | | | | 1 | 0.56** | 0.35** |
| 11 Suicidal ideation | | | | | | | | | | | 1 | 0.54** |
| 12 Suicide attempt | | | | | | | | | | | | 1 |

p* < .05; *p* < .01; ****p* < .001

Table 4 Bivariate Pearson Correlations for White Participants

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|------------------------------|---|------|--------|--------|--------|---------|---------|--------|---------|---------|---------|--------|
| 1 Age | 1 | 0.04 | -0.04 | -0.06 | -0.09 | -0.16** | -0.19** | -0.01 | -0.20** | -0.35** | -0.15** | -0.01 |
| 2 Income | | 1 | 0.42** | -0.12* | -0.08 | -0.07 | -0.07 | 0.18** | -0.19** | -0.05 | -0.01 | 0.04 |
| 3 Education | | | 1 | -0.07 | -0.12* | -0.16** | -0.18** | 0.03 | -0.13* | -0.07 | -0.05 | -0.05 |
| 4 Gender | | | | 1 | 0.01 | 0.11* | 0.17** | 0.07 | -0.04 | 0.06 | 0.05 | -0.03 |
| 5 Sexual orientation | | | | | 1 | 0.05 | 0.04 | 0.16** | 0.04 | 0.06 | 0.16** | -0.03 |
| 6 ACEs | | | | | | 1 | 0.46** | -0.07 | 0.15** | 0.29** | 0.21** | 0.21** |
| 7 IPV | | | | | | | 1 | -0.02 | 0.13* | 0.26** | 0.21** | 0.17** |
| 8 Social support | | | | | | | | 1 | -0.11* | -0.10 | -0.03 | -0.09 |
| 9 Neighborhood disconnection | | | | | | | | | 1 | 0.27** | 0.08 | 0.14* |
| 10 Psychological distress | | | | | | | | | | 1 | 0.38** | 0.27** |
| 11 Suicidal ideation | | | | | | | | | | | 1 | 0.45** |
| 12 Suicide attempt | | | | | | | | | | | | 1 |

* $p < .05$; ** $p < .01$; *** $p < .001$

bisexual had nearly 5 times the odds of past-year ideation compared to heterosexual participants (OR = 4.93, 95% CI = 1.20, 20.21).

In the model predicting suicide attempts among White participants, neighborhood disconnection was marginally significant ($p = .050$) such that those with higher levels of neighborhood disconnection had greater odds of a past-year suicide attempt compared to those with lower levels of disconnection (OR = 6.62, 95% = .99, 43.78). ACE and IPV exposures were not associated with past-year suicide attempts (see table 4). No significant moderation effects were found for social support and neighborhood disconnection in the relationship between ACEs, IPV, and suicide attempts.

Discussion

Drawing on intersectional and ecological theoretical perspectives, this study explored the relationship between ACEs, IPV, and mental health (i.e., psychological distress, suicidal ideation, suicide attempts) within general population samples of Black, Latinx, and White adults, allowing us to account for within-group differences based on gender, sexual orientation, and socioeconomic factors (i.e., income, education). Additionally, we assessed moderating effects of social support and neighborhood disconnection to identify risk and protective factors that may influence the relationship between interpersonal violence and mental health within racial groups. At the bivariate level, ACEs and IPV were positively correlated with psychological distress, suicidal ideation, and suicide attempts for Black, Latinx, and White participants. However, multivariate analyses within racial groups revealed that other factors apart from violence exposure may be stronger predictors of mental health

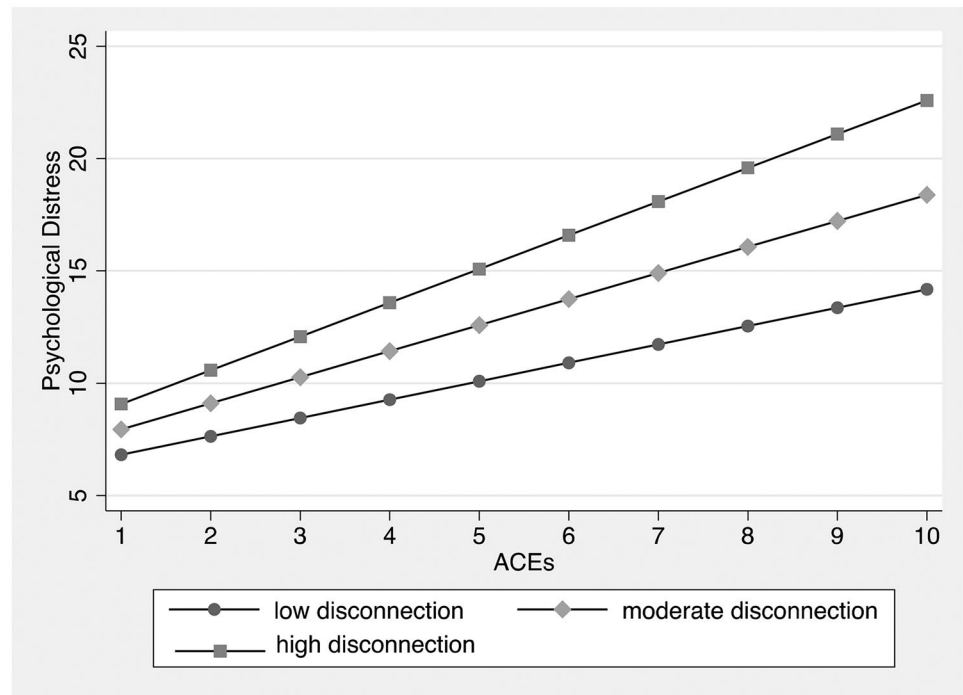
symptoms. In particular, sexual orientation was associated with mental health outcomes within racial groups; Black lesbian/gay/bisexual participants reported higher levels of psychological distress than Black heterosexual participants and White lesbian/gay/bisexual participants reported higher levels of suicidal ideation than White heterosexual participants. These findings highlight the importance of assessing within-racial group differences and how intersecting identities are related to mental health symptoms.

Higher levels of neighborhood disconnection were significantly associated with greater levels of psychological distress for all three racial groups, suggesting that neighborhood disconnection has negative impacts on mental health across racial and ethnic populations. Additionally, we found significant interaction effects between violence and mental health among Black adults, such that the effects of ACEs on psychological distress symptoms for Black adults was strongest among those with the highest levels of neighborhood disconnection. Contrary to prior studies, social support was not significantly associated with any mental health outcome for any racial group at bivariate or multivariate levels. Possible explanations for this finding could be related to the study's measure of social support, which assessed the size of one social network (i.e., the number of people one can rely on), rather than the frequency of contact or quality of support. Overall, findings highlight neighborhood disconnection as a risk factor for mental health symptoms across racial and ethnic populations and may serve as an intervention target to prevent exacerbated mental health symptoms among adults with histories of ACEs and IPV.

Black Participants

IPV was significantly associated with all three mental health outcomes in this general population sample of Black

Fig. 1 Significant interaction effects of neighborhood disconnection on ACEs and psychological distress among Black participants



adults, such that adults with histories of IPV were more likely to have higher levels of psychological distress, past-year suicidal ideation, and past-year suicide attempt than those without IPV exposure. Notably, IPV was the only significant predictor in the model for suicide attempts among Black adults. Prior studies have linked IPV exposure to higher levels of psychological distress, suicidal ideation, and suicidal behavior in samples of Black women (Bradley et al., 2005; Kaslow et al., 2002; Leiner et al., 2008) and our findings extend knowledge on the negative impacts of IPV on distress and suicide risk among Black men.

ACEs were also associated with increased recent psychological distress and past-year suicidal ideation among Black participants. This finding is consistent with prior research demonstrating increased psychological distress among Black adults with histories of ACEs (Youssef et al., 2017; Walling et al., 2011). For example, Youssef et al. (2017) found that African American adults with severe ACE exposures demonstrated greater depressive symptoms compared to those with moderate or low ACE exposure. Studies on suicide risk among Black adolescents demonstrate similar patterns, suggesting a dose-response relationship between ACE exposure

Table 5 Final Model Predicting Psychological Distress, Suicidal Ideation, and Suicide Attempts among Black American Adults (N = 390)

| | Psychological Distress | | | Suicidal Ideation | | Suicide Attempts | |
|----------------------------------|------------------------|-----|---------------|-------------------|----------------|------------------|----------------|
| | B | SE | 95% CI | OR | 95% CI | OR | 95% CI |
| Age | -.08 | .02 | -.12, -.04*** | .94 | .90, .98** | .97 | .91, 1.04 |
| Income | -.08 | .19 | -.47, .31 | 1.13 | .85, 1.50 | 1.24 | .77, 1.99 |
| Education | -.57 | .30 | -1.16, .02 | .97 | .62, 1.54 | .86 | .39, 1.93 |
| Gender | .05 | .55 | -1.04, 1.14 | 1.45 | .64, 3.28 | 1.06 | .25, 4.42 |
| Sexual orientation | 1.75 | .88 | .03, 3.48* | 1.62 | .60, 4.56 | 2.15 | .42, 10.89 |
| ACEs | .48 | .12 | .24, .71*** | 1.28 | 1.11, 1.47*** | 1.17 | .93, 1.49 |
| IPV | .28 | .08 | .13, .43*** | 1.10 | 1.01, 1.20* | 1.19 | 1.04, 1.36* |
| Social support | -.09 | .32 | -.72, .54 | 1.15 | .74, 1.81 | 1.38 | .63, 3.02 |
| Neighborhood disconnection | 1.44 | .32 | .82, 2.06*** | 1.06 | .68, 1.65 | .76 | .37, 1.57 |
| ACE x neighborhood disconnection | .34 | .12 | .12, .57** | --- | --- | --- | --- |
| Model Evaluation | R ² | F | | R ² | χ ² | R ² | χ ² |
| | .29 | | 15.39*** | .20 | 50.24*** | .18 | 19.17* |

*p < .05; **p < .01; *** p < .001

Table 6 Final Model Predicting Psychological Distress, Suicidal Ideation, and Suicide Attempts among Latinx Adults (*N* = 178)

| | Psychological Distress | | | Suicidal Ideation | | Suicide Attempts | |
|----------------------------|------------------------|-----------|---------------|-----------------------|---------------|-----------------------|---------------|
| | <i>B</i> | <i>SE</i> | 95% <i>CI</i> | <i>OR</i> | 95% <i>CI</i> | <i>OR</i> | 95% <i>CI</i> |
| Age | -.13 | .04 | -.20, -.06*** | .98 | .93, 1.03 | .99 | .92, 1.07 |
| Income | -.56 | .28 | -1.12, -.001* | .72 | .48, 1.08 | .85 | .48, 1.50 |
| Education | -.07 | .44 | -.95, .81 | 1.25 | .68, 2.32 | 1.79 | .72, 4.46 |
| Gender | -1.39 | .84 | -3.05, .30 | 1.11 | .38, 3.26 | .27 | .06, 1.26 |
| Sexual orientation | 2.25 | 1.26 | -.24, 4.74 | 2.66 | .74, 9.55 | .34 | .02, 5.05 |
| ACEs | .53 | .19 | .16, .91*** | 1.24 | 1.02, 1.52* | 1.29 | .98, 1.71 |
| IPV | .50 | .11 | .27, .72*** | 1.14 | 1.01, 1.29* | 1.17 | .98, 1.41 |
| Social support | .48 | .50 | -.50, 1.46 | 1.10 | .61, 1.98 | .76 | .32, 1.82 |
| Neighborhood disconnection | 1.35 | .45 | .45, 2.24** | 2.61 | 1.40, 4.88** | 2.04 | .80, 5.21 |
| Model Evaluation | <i>R</i> ² | | <i>F</i> | <i>R</i> ² | χ^2 | <i>R</i> ² | χ^2 |
| | .42 | | 13.26*** | .30 | 45.59*** | .33 | 27.37** |

p* < .05; *p* < .01; ****p* < .001

and suicidal thoughts and behaviors (Price & Khubchandani, 2013; Thorton, 2020). Our findings indicate that the impact of ACE histories on suicidal ideation and suicidal behavior extend beyond adolescence and into adulthood for Black Americans. Rates of suicide among Black adults have increased in recent years, while decreasing in White adult populations (Bray et al., 2020), highlighting the need for targeted suicide prevention efforts and resources directed to Black communities.

Neighborhood disconnection moderated the relationship between ACEs and psychological distress such that distress symptoms were highest among Black adults with ACE histories who had high levels of neighborhood disconnection. Studies on neighborhood factors have more generally identified neighborhood connectedness and social ties as a protective factor against the development of poor physical and mental health outcomes. In a review of 14 longitudinal studies, Blair et al. (2014) identifies pathways linking several neighborhood factors to depression, including the role of neighborhood-based stress and the formation of social

supports. Our findings indicate that disconnection from one’s neighborhood exacerbates the effects of ACEs on psychological distress in adulthood particularly for Black adults. We did not find moderating effects of neighborhood disconnection on suicidal ideation and suicide attempts, suggesting that other factors and intervention targets are likely necessary to mitigate the effects of ACEs and IPV on suicide risk for Black adults.

Latinx Participants

For Latinx participants, IPV was significantly associated with psychological distress and past-year suicidal ideation. These findings are in line with prior research on IPV and other measures of mental health (i.e., depression, emotional functioning, mental health functioning) in samples of Latina women (Bonomi et al., 2009). Latinx adults with ACE exposures were also more likely to report higher levels of psychological distress and past-year suicidal ideation than Latinx

Table 7 Final Model Predicting Psychological Distress, Suicidal Ideation, and Suicide Attempts among White non-Hispanic Adults (*N* = 339)

| | Psychological Distress | | | Suicidal Ideation | | Suicide Attempts | |
|----------------------------|------------------------|-----------|---------------|-----------------------|---------------|-----------------------|---------------|
| | <i>B</i> | <i>SE</i> | 95% <i>CI</i> | <i>OR</i> | 95% <i>CI</i> | <i>OR</i> | 95% <i>CI</i> |
| Age | -.09 | .02 | -.13, -.06*** | .97 | .93, 1.00 | 1.06 | .96, 1.18 |
| Income | -.13 | .18 | -.22, .48 | 1.14 | .81, 1.63 | 3.72 | .84, 16.42 |
| Education | -.12 | .28 | -.67, .43 | .99 | .58, 1.70 | .21 | .03, 1.55 |
| Gender | -.22 | .57 | -.91, 1.35 | 1.31 | .43, 4.03 | .50 | .03, 8.74 |
| Sexual orientation | .68 | 1.17 | -1.62, 2.98 | 4.93 | 1.20, 20.21* | -- | -- |
| ACEs | .45 | .15 | .17, .74** | 1.18 | .96, 1.46 | 1.39 | .80, 2.42 |
| IPV | .14 | .08 | -.02, .29 | 1.11 | .98, 1.25 | 1.31 | .86, 2.01 |
| Social support | .54 | .33 | -1.19, .11 | .75 | .40, 1.43 | .18 | .03, 1.24 |
| Neighborhood disconnection | 1.08 | .32 | .44, 1.72** | 1.15 | .63, 2.11 | 6.62 | .99, 43.78 |
| Model Evaluation | <i>R</i> ² | | <i>F</i> | <i>R</i> ² | χ^2 | <i>R</i> ² | χ^2 |
| | .23 | | 10.69*** | .17 | 24.92** | .54 | 23.42** |

p* < .05; *p* < .001; ****p* < .001

adults without exposure, which is consistent with prior studies (Barrera et al., 2019; Walling et al., 2011). LaBrenz et al. (2020) assessed the prevalence of ACEs and self-rated mental health in a sample of Spanish-speaking Latinx caregivers and found that those with five or more ACEs had significantly worse self-rated mental health scores than those with an ACE score of zero. Findings from this study extend this knowledge to include specific mental health outcomes of psychological distress and suicidal ideation among Latinx women and men exposed to IPV and ACEs.

Neighborhood disconnection was predictive of higher distress and increased likelihood for suicidal ideation among Latinx participants, however, it did not moderate the relationships between ACEs, IPV, and mental health outcomes. Given these findings, it is possible that the experience and impact of neighborhood disconnection on mental health symptoms may be more widely experienced among Latinx populations. Studies on neighborhood health have linked related factors such as neighborhood stability and social cohesion to mental health symptoms, suggesting that neighborhood social ecologies have protective effects on depression for at least some Latinx populations (Hong et al., 2014; Vega et al., 2011). Clinical interventions with Latinx populations, including those with ACE and IPV histories, should consider how neighborhood disconnection influences mental health symptoms as well as potential steps to promote a greater sense of belonging when working with Latinx populations with interpersonal violence histories.

There were no significant predictors in the model for suicide attempts for Latinx participants. This may be due to statistical power issues due to low frequency of suicidal behaviors in the sample. Alternatively, other factors not measured in this study may be associated with suicidal behavior among Latinx adults, such as cultural values, beliefs, and attitudes towards suicide (Zayas & Pilat, 2008). These factors may help distinguish predictors for suicidal ideation versus suicide attempts and mechanisms linking ideation to behaviors in Latinx populations. Additionally, other factors related to discrimination likely impact psychological distress and possibly suicide risk among Latinx populations. Discrimination has been associated with depressive symptoms, anxiety, and psychological stress in Latinx populations (Hatzenbuehler et al., 2017). In addition, researchers in one study found that Latinxs living in states with restrictive, anti-immigration policies faced greater psychological impairments and functioning than Latinxs living in states with less restrictive immigration policies (Hatzenbuehler et al., 2017). Finally, LaBrenz et al. (2020) noted important within-group differences among Latinx populations, such that foreign-born Latinx participants reported higher scores on self-rated mental health compared to those who were U.S. born. These group differences are often referred to as the “immigrant paradox,” as studies on the overall mental health of Latinxs suggest that U.S. born

Latinxs have shown higher rates of mental health problems than immigrant Latinxs (Alegria et al., 2007). It is possible that the lack of significant predictors in the current sample of Latinx adults may be obscured due to within-group differences based on immigration, citizenship status, years lived in the U.S., acculturation, and related factors.

White Participants

Among White participants in this study, ACE exposures were associated with increased psychological distress, but not suicidal ideation or suicide attempts. Our finding linking ACEs to distress specifically, is consistent with prior research using large samples of Kaiser-Permanente members (Strine et al., 2012) and in other general population samples (Baglivio et al., 2014; Nurius et al., 2015; Thompson et al., 2019; Willie et al., 2018). IPV was not associated with psychological distress, suicidal ideation, or suicide attempts in this sample, after accounting for demographic factors, social support, and neighborhood disconnection. These findings were somewhat surprising, given that much of the literature linking ACEs and IPV to adverse mental health symptoms have been conducted on primarily White samples (Devries et al., 2013; Golding, 1999; Manyema et al., 2018; Wingood et al., 2000). However, prior research has not investigated these relationships within racial sub-groups or included measures of neighborhood connectedness, which may, in part, explain divergent findings.

Unmeasured factors in this study, particularly related to help-seeking experiences and access to mental health treatment, could also explain the lack of association between IPV and mental health symptoms among White participants. Although our study did not capture help-seeking experiences and barriers to service utilization, it is possible that White adults exposed to IPV in this study may have been more likely to access and utilize mental health treatment and thus, experience a reduction in mental health symptoms. For example, in a systematic review of help-seeking behavior among IPV survivors, Satyen et al. (2019) found that female survivors of IPV who identified as White used mental health services at higher rates than survivors who identified as Latina and Black. Studies have previously identified structural barriers in mental health help-seeking among Black and Latinx populations including issues of accessibility, transportation, childcare needs, language access, and issues related to work and employment (Bent-Goodley, 2007; Sabri et al., 2015) which White populations do not as readily face. White adults are also more likely to have employer-based health insurance and less likely to experience insurance loss than racial and ethnic minorities (Sohn, 2017), which could protect against mental health symptoms associated with IPV.

Finally, neighborhood disconnection was associated with psychological distress for White adults, but not suicidal

ideation or suicide attempts; and no moderating effects of neighborhood disconnection were found in the relationship between ACEs, IPV, and mental health outcomes. The effects of neighborhood disconnection on mental health may be more pertinent for non-White communities, particularly as urban communities of color are disproportionately impacted by related issues such as neighborhood gentrification, which may in turn impact mental health symptoms and local access to mental health care and other resources and services (Freeman, 2005; Lim et al., 2017).

Limitations

Several limitations should be considered in interpreting this study's findings. Findings may not be generalizable to populations in other cities as participants were recruited from Baltimore and New York City. This study was also limited to English-speaking participants and findings are not generalizable to non-English speaking populations, which may be particularly important to interpreting results for Latinx participants in this study. There were very small sample sizes of transgender and gender non-conforming participants in the study sample ($n = 6$), and we were not able to adequately account for differences in cisgender and transgender identities within racial groups. Relatedly, power analysis results indicated that sample sizes may have been less than adequate to detect small effects in Latinx and White samples; however, samples were well-powered to detect medium and large effects. The survey data are cross-sectional and as such, causality and temporality among study variables cannot be fully determined particularly for IPV exposures and mental health symptoms. For example, it is possible that individuals with increased mental health symptoms (e.g., psychological distress, symptoms contributing to suicide such as low sense of worth and hopelessness), may perceive less connectedness in their neighborhoods due to these preexisting psychological symptoms, rather than neighborhood disconnection itself leading to influencing mental health symptoms.

Additionally, there were some limitations to the study measures. While our study assessed factors across the social ecology (i.e., individual, peer/family, community/neighborhood), they were captured at individual-levels (i.e., individual perceptions) and not at a neighborhood-levels, which is important to provide a comprehensive picture of factors operating across levels of the social ecology. Additionally, the neighborhood disconnection scale measures feelings of not belonging to one's neighborhood and does not capture positive experiences of connections to one's neighborhood and thus, conclusions on any positive effects related to these connections are limited. The measure of social support assessed the size of one's social network, as it assesses the number of people one can rely on, rather than the quality of those supports. Prior studies assessing social support with

this and other measure (i.e., the size of one's social network, frequency of contacts) has found this to be significant predictor of mental health in samples of women (Coker et al., 2003; Mburia-Mwalili et al., 2010). We explored these relationships among both men and women and within specific racial groups, which may explain this inconsistency. Future research should consider prospective study designs that can more precisely measure ACE and IPV exposures in relation to mental health symptoms, including how measures of social support and neighborhood disconnection, including positive interactions and connections with one's neighborhood, affect the relationship between IPV and mental health. Finally, our study did not include measures assessing structural inequalities affecting Black and Latinx populations, particularly discrimination, which shapes experiences of interpersonal violence and mental health (Bent-Goodley, 2007; Sabri et al., 2015). Despite these limitations, this study expands knowledge on within-group experiences of ACEs, IPV, and mental health among Black, Latinx, and White adults. This study also identifies neighborhood disconnection as a potential risk factor for psychological distress across racial populations, and as a risk factor for suicide in Black and Latinx populations and can guide future studies in applying intersectional and ecological frameworks to this area of research.

Conclusions and Future Research

In this study, ACE exposures were associated with higher levels of psychological distress within all three racial groups. These findings highlight the long-term consequences of ACEs on mental health in adulthood and the need for early mental health interventions addressing childhood trauma across populations. IPV was a significant predictor of distress, suicidal ideation, and suicide attempts for Black participants and for distress and suicidal ideation for Latinx participants; however, IPV was not associated with any mental health symptoms for White participants. The increased risk for suicide among Black and Latinx participants exposed to ACEs and IPV indicate the need for targeted resource and funding allocation to Black and Latinx communities, which can be used to support survivors of childhood trauma and IPV and guide suicide prevention efforts within these specific communities. Studies have previously highlighted the role of resilience, coping strategies, and spirituality on mitigating depression and mental health symptoms associated with IPV, particularly among Black women (Bradley et al., 2005; Sabri et al., 2013; Taft et al., 2009). Furthermore, scholars have previously pointed to the need to measure racism-related stress to inform suicide prevention interventions and policies specifically in Black communities (Jones & Neblett, 2017). Culturally relevant factors not measured

in this study such as ethnic identity, immigration status, citizenship status, acculturation, spirituality, and coping strategies are also important to better understand the complex relationship between interpersonal violence and mental health. Future studies should include measures of race-based trauma and stress, as well as culturally relevant factors and resources that likely influence experiences of ACEs and IPV and may also act as protective factors against negative mental health outcomes. There is also a need for this research to examine potential differences in pathways between ACEs, IPV, and mental health symptoms among Black adults based on gender identity, socioeconomic status, sexual orientation, and other demographic factors.

We did not find any significant effect of social support on mental health symptoms within the racial groups included in this study, or any moderation effects of social support on ACEs, IPV, and mental health. This may be due to the study's measure of social support or due to differences in the current study sample to prior study samples. Future studies should capture other elements of social support in addition to the size of a social network, such as the frequency of contacts and the quality of emotional support. Notably, this study found that neighborhood disconnection increases psychological distress within Black, Latinx, and White populations, suggesting that a decreased sense of belonging to one's neighborhood has negative mental health consequences across populations. Neighborhood disconnection moderated the relationship between ACEs and psychological distress among Black participants, such that distress symptoms were highest among Black adults with ACE histories who had high levels of neighborhood disconnection. Overall, these findings suggest that neighborhood disconnection leads to distress across racial populations, and that symptoms are most exacerbated among Black adults exposed to ACEs with high levels of neighborhood disconnection. Neighborhood and community programs aimed at strengthening neighborhood connections and a creating a safe, nurturing, and stable environment for residents can promote positive mental health and wellbeing and reduce risks for ACEs and IPV (Prevent IPV, 2021). Future research is needed to better understand mechanisms and processes by which ACEs and IPV lead to mental health symptoms within racial groups that are captured across levels of the social ecology (individual, peer/family, neighborhood), such as incorporating neighborhood or community-level data (e.g., access to mental health treatment, disparities in insurance access and coverage), in addition to individual-level factors (e.g., patterns of help-seeking) which can provide a more comprehensive picture of risk and protective factors operating across levels of the social ecology.

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Declarations

Conflict of Interest The authors did not obtain any monetary or non-monetary support for this paper and report no conflicts of interest.

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