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The Relevance of Mindfulness and Social Connectedness in Trauma Survivors during COVID-19

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Abstract

Objective: Extensive literature has demonstrated that subsequent trauma exposure can further exacerbate trauma survivors' psychological distress and that social connectedness and mindfulness mediate trauma symptoms. The COVID-19 pandemic, deemed within current literature as a collective trauma, continues to impact individuals' mental health and is especially relevant for individuals in marginalized communities and those with previous mental health diagnoses. The current study examined whether social connectedness and dispositional mindfulness mediated the relationship between trauma exposure before the COVID-19 pandemic and psychological symptoms and whether the strength and direction of this relationship is moderated by race.

Method: Using a mediation–moderation model, the current study examines whether social connectedness and dispositional mindfulness buffer adverse psychological symptoms for trauma survivors and whether race moderates the mediating effects of social connectedness and dispositional mindfulness.

Results: For trauma survivors during COVID-19 lockdowns, social connectedness and dispositional mindfulness were associated with decreased anxiety and depression. Race was not a moderator of social connectedness, but race did moderate dispositional mindfulness for individuals identifying as European American.

Conclusions: Results suggest the importance of utilizing social connectedness and dispositional mindfulness when counseling trauma survivors, highlighting the vital need for mental health professionals to incorporate culturally relevant, trauma-informed practices associated with increasing social connectedness and dispositional mindfulness to address symptoms of anxiety and depression.

Introduction

Researchers consistently identify the global mental health crisis triggered by the coronavirus disease-19 (COVID-19) pandemic as a collective trauma [100,101,107]. While rates of anxiety and depression in adults increasing from 11% to 40% (Panchal et al., 2021) [73] is alarming, the true magnitude of pandemic-related mental health needs remains unknown. Another grave concern is how COVID-19 highlights the far-reaching impact of health inequality among vulnerable populations, specifically among racially minoritized populations [66,103].

Following historical trends of public health crises, communities of color, adults with less education, and lower-income households are more vulnerable to pandemic-related anxiety and mood disorders [59,69,70,73]. These groups also report higher rates of pre-pandemic trauma exposure [74]. As such, researchers must investigate the psychological impact of COVID-19 within the context of collective trauma and identify evidence-based practices counselors can use to support high-risk client populations.

COVID-19 as a Collective Trauma

Collective trauma is a traumatic event that impacts entire groups of people, communities, or societies [54]. The impact of collective trauma persists, with multigenerational implications for impacted communities. As a collective trauma, COVID-19 placed individuals with a history of emotional health concerns, particularly trauma survivors, at risk [81]. Trauma researchers

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have long supported the idea that multiple traumatic experiences, including real or perceived physical health threats, amplify traumatic stress symptoms in survivors [16,81] (Breslaue et al., 2008). During the COVID-19 pandemic, the lack of social connectivity, limited access to mental health support services, the loss of family and friends to COVID-19, and survivors' inability to access previously identified natural support systems and treatment due to social distancing restrictions severely limited vital post-trauma interventions and recovery efforts [47].

Despite emerging findings on stress-related mental health disorders during COVID-19 (Alzueta et al., 2020) [87,112], research on the impact of prior trauma exposure and increased psychological risk is limited, and the relationship between trauma exposure and COVID-related stress symptoms are particularly understudied among racially minoritized groups [57]. Extant research demonstrates that prior trauma exposure amplifies the risk for physical and mental health problems when individuals are exposed to additional trauma (Author et al., 2022a; Breslaue et al., 2008; [81].

Trauma and COVID-19

The impacts of traumatic experiences are wide-ranging and vary in severity [16]. Individuals who experienced trauma are more likely to be diagnosed with Generalized Anxiety Disorder (GAD), depression (Breslau, 2009; Ghafoori et al., 2015) [15], substance use disorders [79] (Fernandez & Osório, 2015), and posttraumatic stress disorder [16,62]. Subsequent trauma exposures, including medical threats such as COVID-19 [46,64], increase trauma survivors' risk for further psychological distress (Breslau et al., 2008) [81]. Author et al. (2020a) found that during the first months of the COVID-19 pandemic, individuals who reported previous trauma exposure reported significantly higher levels of anxiety and depression. Over decades, researchers continued to demonstrate that reported trauma exposure is linked to increased adult risk of health conditions (Kilpatrick et al., 2013), even when the trauma occurred during childhood [30,36].

Trauma Impacts and Moderators

Trauma encompasses events experienced or perceived as harmful or life-threatening that result in long-lasting negative impacts on individuals' "mental, physical, social, emotional, or spiritual well-being" [89]. An estimated 46% of Americans experienced at least one traumatic event during childhood [88], and 89.7% reported exposure to at least one traumatic event in adulthood [62]. In the United States, individuals of lower socioeconomic status, historically minoritized groups, including BIPOC and LGBTQ+ populations, and individuals living with intellectual and developmental disabilities report higher rates of trauma exposure [50,71,74,90].

Individuals from minoritized populations also face an increased risk of living in poverty, being exposed to higher rates of crime and unemployment, and multigenerational stressors associated with pervasive racism and systemic discrimination [40,42]. Consequently, these groups also report higher rates of trauma exposure, both in childhood [62] and adulthood [40]. To fully understand the impact of COVID-19 on minoritized populations, the impact of intersectional trauma - or the complex, multiple, and often ongoing ways in which trauma can be caused by or exacerbated by social injustice and discrimination - must be considered [30,35]. Historically, significant racial and ethnic differences in infection rates within the US population are well documented [5,31,57,60,93]. For persons identifying as Black, Indigenous, or Persons of Color (BIPOC), these trends continued during the COVID-19 pandemic [57]. Lower Socioeconomic Status (SES), limited access to health care, increased rates of unemployment, and living or being employed in areas where social distancing was challenging [25,57] deepened existing health disparities. As a collective trauma, COVID-19 had a global impact. Consistent with an intersectional trauma lens, this impact can be magnified by socio-structural sources of trauma and stress, such as systemic discrimination and oppression, that is often ignored or overlooked in mental health practice [35,40,57].

Social Connectedness as a Mediator of Anxiety and Depression

One of the most challenging aspects of COVID-19 may be the restriction of human connection. People cannot survive alone; they need to connect with other people. Social connection to others is essential to mental and physical health [111]. As such, social connectedness serves as a buffer against highly stressful circumstances (Gariépy et al., 2018), mediates stress and mental health outcomes [26], and is linked to increased psychological wellness [111]. In trauma survivors, researchers demonstrated that even perceived social support can reduce feelings of distress and lower the risk of trauma-related disorders [22,72]. Additionally, [77] found that individuals diagnosed with PTSD recover faster when they experience increased levels of social connectedness.

Within a meta-analysis of predictors of PTSD symptomology, lack of social support was conveyed as one of the strongest risk indicators [16]. Conversely, researchers found that social disconnectedness is associated with impaired recovery and greater symptom severity in individuals diagnosed with depression (Gariépy et al., 2018). While officials enacted social distancing and stay-at-home mandates to protect individuals' physical health, those mandates likely augmented mental health difficulties [10,21] Braunack-Mayer et al., 2009). For many trauma survivors, social distancing mandates were a continuation or re-emergence of traumatic stress.

Mindfulness as a Mediator of Anxiety and Depression

Good et al. (2015) described mindfulness as the ability to observe and recognize internal and external experiences without evaluation, judgment, or interpretation, remaining present in the experience, and accepting the emotions and outcomes that occur [8]. Dispositional, or trait, mindfulness is distinct from mindfulness. In addition to present-moment awareness, Dispositional Mindfulness (DMDM) incorporates the innate capacity of an individual to *maintain* awareness (Tomlinson et al., 2018). Individuals with higher levels of mindfulness tend to be more aware and accepting of their emotions, cognitions, and behaviors, resulting in lower levels of distress or negative reactivity [96]. DM is reported as being associated with individuals being able to adopt and maintain a particular state of mind spontaneously; remaining attentive to and accepting of whatever stimuli enter one's awareness [96]. Researchers found that DM may reduce trauma's psychological impact among trauma survivors [37,61,99].

Individuals' experience of DMDM can occur regardless of mindfulness practice, though it can be strengthened through mindfulness meditation or other training in emotional awareness, self-acceptance, and compassion [51,53,84,94]. Like so-

cial connectedness, researchers found that individuals displaying higher levels of DMDM reported lower stress levels five and thirty minutes following a stressful event [108]. Low mindfulness levels increase stress and negative health impacts [98].

In addition to being a dispositional trait, current research on the efficacy of mindfulness-based mental health interventions in reducing symptoms of anxiety and depression is promising [55,76,102]. Researchers found positive relationships between dispositional mindfulness and subjective well-being [11], self-acceptance [113], and negative associations with perceived stress [1] and symptoms of anxiety and depression [17]. For trauma survivors, higher levels of dispositional mindfulness are associated with decreased severity of PTSD symptoms [37,61,99], increased self-acceptance [80,110], and increased ability to speak of their experiences [80]. Researchers also found DMDM as a protective factor during shutdowns associated with COVID-19, as individuals with higher levels of mindfulness may be more likely to tolerate the negative emotions derived from physical distancing, such as boredom, loneliness, or fear (Author et al., 2022b) [28].

Purpose

This research aims to broaden mental health professionals' understanding of how dispositional mindfulness and social connectedness mediate adverse psychological outcomes in trauma survivors and whether these outcomes are moderated by race. We aimed to address the gap in the current research, which fails to adequately address the impact of intersectional trauma on trauma survivors during COVID-19. Leveraging research on mindfulness and social connectivity, specifically evidence that persons with higher levels of mindfulness and social connectivity report higher levels of psychological well-being (Ciesak et al., 2009; Luszcynska et al., 2007) [37,61,99], we hypothesized that these factors would mediate adverse psychological outcomes. Additionally, we sought to investigate the potential differences in impact of social connectedness and DM based on racial identity, as communities of color are more vulnerable to pandemic-related anxiety and mood disorders [59,73] Litam & Hipolito-Delgado, 2020; Liu et al., 2020) and report higher rates of pre-pandemic trauma exposure [74]. Therefore, exploring the impact of social connectedness and DM within higher-risk client populations is vital to provide necessary evidence-based care.

Methodology

Moderation-mediation models are advantageous when researchers seek to understand whether one or more variables' effects are contingent upon another variable (Edwards & Konold, 2022). Using a mediation–moderation model, we examined the impact of trauma exposure on depression and anxiety, how social connectedness and dispositional mindfulness may buffer adverse symptoms, and whether mediating effects are moderated by race (Figure 1 & Figure 2). Using a combined model allows us to simultaneously investigate whether interaction effects (i.e., the buffering effect of social connectedness and dispositional mindfulness on symptoms of anxiety and depression) are contingent upon a specific condition, such as race [52].

Participants

Following approval from a university Institutional Review Board, data were collected using Qualtrics research panels, a secured online crowd sourcing platform. Following consent, 1,616 individuals self-selected to participate through an anonymous web link, accessible for 20 days in June 2020. Inclusion criteria included fluency in English, over the age of 18, and currently residing under a Phase 1 stay-at-home order in the Commonwealth of Virginia [27]. Responses indicating abnormal completion rates (*n*=203), straight-lining (*n*=148), or in violation of inclusion criteria (participants under the age of 18 (*n*=61) or not currently under a stay-at-home order in Virginia) were removed.

We identified one state for recruitment to reduce variance due to differentiated government mandates for COVID-19 guidance and focused on the first few months of the pandemic to examine the mental health impact during the most restrictive government mandates. We used non-probability quota sampling to ensure the sample was demographically representative (±10%) of the recruitment state and the 2020 United States census data for gender, race/ethnicity, age, and income.

The final sample included 1,204 English-speaking adults (over the age of 18); 633 (51%) identified as female, 604 (48.6%) as male, and five as transgender (.04%). In alignment with demographic distributions based on race and age, most respondents identified as European American (n=761, 61.3%) and between 35 and 44 (n=281, 21.9%) years of age. Within the sample, 284 (22.87%) participants reported no traumatic experiences, 281 (22.62 %) reported one lifetime trauma exposure, 209 (16.83%) reported two, and 468 (37.70%) participants reported three or more trauma exposures within their lifetime. Additional descriptive information is provided in Table 1.

Table 1: Sample Demographic Information.

	n	*%*
Race		
Asian/Asian American	74	6.0
Black/African American	230	18.5
Hispanic/Latino/a	124	10.0
White	761	61.3
Other	53	4.2
Gender		
Female	633	51.0
Male	604	48.6
Transgender	5	0.4
Age		
18-24	219	17.6
25-34	161	13.0
35-44	272	21.9
45-54	153	12.3
55-64	218	17.6
65+	219	17.6

Table 2: Descriptive Statistics and Correlations between Trauma Exposure, Mindfulness, Social Connectedness, Anxiety, and Depression.

Variable	*M*	*SD*	*1.*	*2.*	*3.*	*4.*	*5.*	*6.*
Race			*1*	*.01*	*-.05*	*.13***	*-.12***	*-.09***
Trauma	2.37	2.31	*.007*	*1*	*.32***	*1.97***	*.13***	*.37***
Mindfulness	43.02	16.53	*-.05*	*.32***	*1*	*-.43***	*.29***	*.65***
Social Connectedness	79.48	17.02	*.13***	*-.20***	*-.43*	*1*	*-.23***	*-.54***
Anxiety	58.07	9.66	*-.12***	*.13***	*.29***	*-.23***	*1*	*.32***
Depression	55.18	10.49	*-.09***	*.37***	*.65***	*-.54**	*-.32***	*1*

*** significant at .01 level (2-tailed)*

n =1241

*For PROMIS-A and D, a T-score less than or equal to 54.9 is within normative limits for the general population, 55 to 59.9 indicates mild symptoms, 60 to 69.9 indicates moderate symptoms, and 70 to 84.1 indicates severe symptomatology.

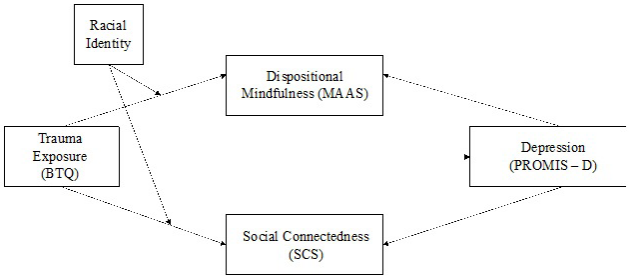

Figure 1: Moderated Mediation of Social Connectedness, Dispositional Mindfulness, and Racial Identity on Depression.

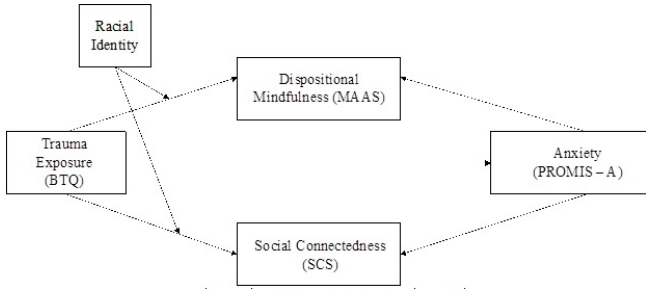

Figure 2: Moderated Mediation of Social Connectedness, Dispositional Mindfulness, and Racial Identity on Anxiety.

Measures

We examined the constructs of anxiety, depression, trauma exposure, social connectivity, and dispositional mindfulness. The data collection instruments included the (a) Patient Reported Outcome Measurement Information System (PROMIS) 8-item Short Form (version 1.0) scale for Anxiety (PROMIS-A) and Depression (PROMIS-D); (b) The Brief Trauma Questionnaire [92]; (c) the Social Connectedness Scale - Revised (SCS-R; [67,68]; and the (d) Mindful Attention Awareness Scale (MAAS; [79].

PROMIS Anxiety and Depression: The National Institute of Health developed the Patient-Reported Outcomes Measurement Information System (PROMIS) to provide researchers and clinicians with an efficient self-report measurement system for over 70 physical, mental, and social well-being domains. The short form PROMIS-A and PROMIS-D assess anxiety and emotional distress levels by asking how often in the past seven days individuals have experienced symptoms. The 8-item scales both use a 5-point Likert scale, ranging from "Never" to "Always." Summed raw scores are converted to an Item Response Theory (IRT) based T-score [23]. Greater scores indicate higher levels of the domain (i.e., higher PROMIS-A and PROMIS-D scores indicate increased symptoms of anxiety and depression). Centered on a large general population sample [70], the PROMIS measures offer a tremendous advantage for researchers seeking to identify general population impact. Both demonstrated high internal consistency within our study, with PROMIS-A α=93.7 and PROMIS-D α=95.3.

Brief Trauma Questionnaire (BTQ): [92] designed the BTQ to assess trauma using the DSM-IV, Criterion A. Considered a valid, reliable, self-report instrument [65] Schnurr et al., 2002), the BTQ is a ten-item self-report questionnaire that assesses respondent exposure to different types of traumatic events.

Social Connectedness Scale - Revised (SCS-R): The SCS-R is a 20-item, 6-point Likert scale that measures positive and negative aspects of social connectedness [67,68]. Deemed an excellent measure of social inclusion, the SCS-R has high internal consistency (α=.92) and strong content and structural validity [29,68].

Mindful Attention Awareness Scale (MAAS): The MAAS [79] is a self-report survey tool measuring dispositional attention and awareness levels. The single-factor instrument includes 15 items on a six-point Likert-type scale, rated from 1 (almost always) to 6 (almost never), to assess attention and awareness, such as, "I break or spill things because of carelessness, not paying attention, or thinking of something else." Research supports strong validity with related measures, including the Mindfulness/Mindlessness Scale [12] and consistently high levels of internal consistency (α = 0.90).

Data Analysis

Prior to any statistical analyses, we ensured the data met all assumptions. All scales showed acceptable internal consistency, with α=.94 for the PROMIS-A, α=.95 for the PROMIS-D, α=.74 for the BTQ, and α=.94 for the MAAS. Significance was set at α=.05 for all measures. We conducted assumption testing for multiple linear regressions, and the data met all assumptions for analysis. Preliminary analyses included a review of descriptive statistics and Pearson Correlations between the main variables. We conducted correlation testing to examine differences in participants within two racial identity groups (e.g., those identified as members of the BIPOC community and White). These two groups were identified due to participation frequencies and unequal numbers in participant identified racial groups.

We ran moderated mediation analyses with mediator variables social connectedness and dispositional mindfulness to examine whether social connectedness and dispositional mindfulness mediated the relationship between trauma exposure and anxiety and depression and if race moderated these effects. To evaluate the hypothesized moderated mediation model, we analyzed data using the Statistical Package for the Social Sciences (SPSS) and Hayes' PROCESS 7.0. We used bootstrap analysis (5,000 samples; [83].

Results

Direct effects for social connectedness and dispositional mindfulness were significant for both anxiety and depressive symptoms for individuals with a reported history of one or more trauma (Table 2). Social connectedness significantly mediated the relationship between trauma exposure and symptoms of anxiety (b=-.06, se=.02, t=-3.79, p<.01) and depression (b=-.16, se=.01, t=-12.19, p<.01), with higher levels of social connectedness predicting lower levels of anxiety and depression. Similarly, dispositional mindfulness significantly mediated the relationship between trauma and anxiety (b=.120, se=.120, p<.01) and trauma and depressive symptoms (b=.240, se=.01, t=17.650, p<.01). Interestingly, within this sample, reported trauma was not a significant predictor of anxiety (b=.180, se=11, p.>.10), but was a significant predictor of depression (b=.57, se.=077, t=7.44, p<.01).

Moderated Mediation Analysis for Anxiety

To test whether the direct and indirect effects of social connectedness and dispositional mindfulness on anxiety symptoms are moderated by race, we conducted a moderated mediation analysis using PROCESS macro model number 7 (Table 3). Race did moderate the indirect effect of dispositional mindfulness on anxiety (ß=1.28, se=.44, t=2.93, p>.01) but not the indirect effect for social connectedness. The overall moderated mediation

Table 3: Summary of the Moderated Mediation Analysis for Direct and Indirect Effects of Trauma on Anxiety.

	Mediator variable: SCSC.				Mediator variable: MAAS				Dependent variable: Anxiety			
Predictors	***B* (b)**	**SE**	***p***	**95% CI for B**	***B*(b)**	**SE**	***p***	**95% CI for B**	***B*(b)**	**SE**	***p***	**95% CI for B**
Trauma	-2.36	.66	>.01	-3.67-1.08	.19	.75	.80	-1.29-1.61	.11	.11	>.1	-.09-.31
R2	.11				.11				.10			
Conditional Indirect effect of race					.15	.06		.05-.26				
BIPOC					.17	.05		.08-.27				
white					.32	.05		.21-.43				

B = unstandardized regression coefficients; *b* = standardized regression coefficients, CI = Confidence Intervals based on 5,000 bootstrapped samples

Table 4: Summary of the Moderated Mediation Analysis for Direct and Indirect Effects of Trauma on Depression.

	Mediator variable: SCSC.				*Mediator variable: MAAS*				*Dependent variable: Depression*			
Predictors	***B (b)***	***SE***	***p***	***95% CI for B***	***B (b)***	***SE***	***p***	***95% CI for B***	***B (b)***	***SE***	***p***	***95% CI for B***
Trauma	-2.38	.66	>.01	-3.67-1.08	.19	.75	<.1	-1.29-1.66	.57	.08	>.01	.42-.73
R2	.06				.11				.53			
Conditional Indirect effect of race					.31		1.0	.10-.51				
BIPOC					.35			.10-.51				
white					.66			.52-.78				

B = unstandardized regression coefficients; b = standardized regression coefficients, CI = Confidence Intervals based on 5,000 bootstrapped samples.

model was supported with the index of moderated mediation =.15 (95% CI=.05; .26). Results indicate a significant moderating effect on anxiety on the indirect effect via dispositional mindfulness, as zero falls outside the levels of confidence (Hayes, 2015). The conditional indirect effect was strongest in those who identified as White (effect=.320, se=.06, 95% CI=0.21; -0.43).

Moderated Mediation Analysis for Depression

To test whether the direct and indirect effects of social connectedness and dispositional mindfulness on depressive symptoms are moderated by race, we ran a second moderated mediation model (Table 4). Results indicated that race did moderate the indirect effect of mindfulness on depressive symptoms. The overall moderated mediation model was supported with a moderated mediation index of .31 (95% CI =.10; -.51). In comparison to BIPOC respondents, with an effect =.352, SE=.09, 95% CI .19; .53, the mediation effect between dispositional mindfulness and depressive symptoms was nearly double for White respondents (effect=6.59, SESE=.07, 95% CI=.52; .80). Similar to our findings for anxiety, the interaction effect between race and social connectedness on depressive symptoms was not significant.

Discussion

Results of the current study imply that social connectedness and dispositional mindfulness serve to moderate symptoms of anxiety and depression for trauma survivors and yield interesting findings about the role of race in mediating these effects. The COVID-19 pandemic significantly impacted members of the BIPOC community [25,57,59] and trauma survivors [47]. These findings highlight the protective nature of social connectedness and dispositional mindfulness for symptoms of anxiety and depression. Moreover, in combination with our other findings, these findings emphasize the need for clinicians to carefully consider a client's racial identity and circumstances impacting their natural support systems.

While trauma was a significant predictor of increased levels of depression, it was not a significant predictor of anxiety within our sample. These results differ from much of the literature on both childhood trauma [33] and trauma in adulthood [14,15,85] (Ghafoori et al., 2015) which yields higher levels of anxiety in trauma survivors. This finding is best explained by looking at the unique circumstances of the current pandemic and emergent resilience literature among lifetime trauma survivors. Scali et al. (2012) found that while trauma survivors demonstrated fewer anxiety disorders and higher levels of resiliency, the same was not true for depression. Similarly, Grills-Taquechel et al. (2011) did not find a significant increase in pre- and post-anxiety levels in a sample of mass shooting survivors, but levels of depression were significantly higher within their sample. We do not dispute that acute anxiety levels may increase immediately following a traumatic event, but we recognize that post-event depressive symptoms may be more common. Because data were collected during the third month of COVID-19 lockdowns, it is also likely that anxiety symptoms within our sample started to decrease in accordance with an increase in formal social distancing protocols and public health response initiatives. Wang et al. (2020) found that the accuracy of the information provided by the state about the disease and preventive measures, such as hand washing, reduced anxiety and depression. Future research should further evaluate the idea that increases in anxiety are less common than depression following the initial months of a public health crisis and associations between public health response perceptions and anxiety.

In alignment with Ciesak et al. (2009) and Luszcynska et al. (2007), higher levels of social connectedness served to decrease rates of anxiety and depression in trauma survivors. This finding indicates that interventions aimed at increasing levels of social connectedness may help reduce or alleviate adverse psychological outcomes for those most at risk of re-traumatization during a public health crisis. Given the unique nature of the COVID-19 pandemic and social distancing requirements, traditional ideas of maintaining social connectedness need to be expanded beyond in-person interactions. Onderdijk et al. (2021) found that participating in virtual concerts during COVID-19 fostered social connectedness among older adults, thereby providing evidence that technology-based interventions can be a potential source of social connectedness. Technology-based interventions are especially relevant when social movement is restricted within an entire community or for an individual.

Mental health professionals working with trauma survivors during COVID-19 or future pandemics should consider the size of one's social network. Butler et al. (2009) and Kroenke et al. (2013) found that more extensive social networks lowered psychological distress. For many trauma survivors, social distancing

mandates were a continuation or re-emergence of traumatic stress. Clinicians should explore the impact of COVID-19 on survivors' social networks and, if needed, identify client-specific interventions to bolster the client's social network. Regardless of racial identity, all participants reported that increased social connectedness decreased anxiety and depressive symptoms during the first three months of lockdown. Researchers continued identifying social connectedness as a protective factor, especially for individuals and communities disproportionately impacted by COVID-19 (Author et al., 2022b) and other disasters [2] found social connectedness to be a key component of post-disaster resiliency. During COVID-19, individuals frequently sought out connections via technology or phone. Researchers found that individuals who used social media to connect with friends and family had increased levels of social connectedness [24,75], research is limited [95], and many are unable to participate due to digital inequity [9].

Additionally, within this sample, though not all participants experienced trauma, everyone experienced the same COVID-19 pandemic, especially within the first months of lockdown, and therefore could potentially understand, converse, and empathize with their social networks about their experiences [97] in a way that may not be possible for trauma survivors outside a support group. These results highlight the importance of continuing to encourage social connectedness for trauma survivors and the role of mental health practitioners and public health authorities in understanding and supporting social engagement and connectedness as a vital component of mental health [34,38]. Jacobs and Burch (2021) encouraged mental health practitioners to address social connectedness within Black communities through religious activities, extended family gatherings, and engagement with social networks to alleviate anxiety from the COVID-19 pandemic. Public health, medical, and mental health professionals can also explore and promote the different ways in which social connection, as social connectedness may differ across culture and identity [35,40,57].

While unexpected, it is unsurprising, especially during the early stages of a pandemic when social interactions were severely limited, that dispositional mindfulness was more impactful than social connectedness in moderating depression and anxiety. As a practice and dispositional trait, mindfulness does not require a human connection. Thus, it follows that trauma survivors with higher levels of dispositional mindfulness would experience fewer symptoms of depression and anxiety. Within the trauma literature, Weinstein et al. (2009) found that individuals with higher levels of dispositional mindfulness reported few psychiatric symptoms. Nitzan-Assayag et al. (2015) found that dispositional mindfulness facilitated post-trauma emotional processing. Due to the inherent nature of dispositional mindfulness, a practice that aids in coping during stressful events, it may be that participants with higher levels of dispositional mindfulness are better able to cope with the anxiety and depressive experiences during COVID-19. Individuals who accept their experiences, emotions, and cognitions experience less distress and negative reactivity [96] as they recognize that their emotions are valid and temporary.

Our results are promising for clinicians seeking to aid trauma survivors and add to the current literature on mindfulness-based interventions for anxiety and depression [55,76,102]. As we begin to see the deleterious impact of COVID-19 as a collective trauma, mindfulness interventions should be considered. Mindfulness mental health interventions increase participants' subjective well-being [11], self-acceptance [113], negative associations with perceived stress [1], and symptoms of anxiety and depression [17]. Higher levels of dispositional mindfulness in trauma survivors have been associated with decreased severity of PTSD symptoms [37,61,99], increased self-acceptance [110], and increased ability to process their experiences [80]. Our results further the evidence base on the effectiveness of dispositional mindfulness in moderating the relationship between trauma and psychiatric symptoms during the COVID-19 pandemic.

Our results indicate that race moderated the relationship between dispositional mindfulness and levels of anxiety and depression. While researchers continue to identify the benefits of dispositional mindfulness in reducing the harmful psychological impacts of trauma, the role of mindfulness in addressing racial trauma is just being explored [18,106]. Watson-Singleton et al. (2018) found that dispositional mindfulness reduced depressive symptoms and suicidal ideation among African Americans. Graham et al. (2016) and Zapoliskiet al. (2018) found that dispositional mindfulness moderated the effects of racial discrimination and anxiety symptoms. While not surprising given the lack of culturally tailored evidence-based interventions for BIPOC individuals, the finding that the effect of dispositional mindfulness is nearly twice as high for White respondents requires attention. Universally, mindfulness-based treatments are rarely culturally tailored to address interpersonal and racial trauma. Some researchers claim mindfulness is currently positioned within clinical practice and is seen "as a luxury" or an intervention that requires significant financial resources to practice, such as meditation and yoga [58,79]. Practitioners are strongly encouraged to integrate culturally relevant mindfulness practices for members of the BIPOC community. Collaboration with Indigenous and African American church communities to explore how the practice of metta, which promotes benevolence and loving kindness, is consistent with theological teachings can foster the development of culturally relevant mindfulness interventions uniquely tailored to a client's community.

While this study advances the existing literature on the experiences of trauma survivors during the COVID-19 lockdown, our study is not without limitations. Limitations of the current study include the collapsing of participant racial identity into two variables: individuals who identified as Black Indigenous People of Color and those that identified as white. While it is not the belief of the authors that the experiences of all people of color are similar, due to the frequencies, to explore racial differences and moderation of race on mediating effects of social connectivity and mindfulness on anxiety and depression for trauma survivors during COVID-19 lockdowns, we had to collapse the racial identity into a dichotomous variable. While our sample was diverse, the participants' multiple identities created difficulties in representing our sample to their fullest extent. Additional limitations include the use of self-report measures, which may increase participant bias, symptom minimization, and misinterpretation. Furthermore, racial minorities may under-report or under-recognize distress symptoms [49], further impacting results. Because we used cross-sectional design during social-distancing measures, caution should be taken in generalizing to broader populations.

Future researchers can examine how culturally unique stressors such as racism can interact with trauma symptoms [86] and use various interventions to mitigate psychological distress, such as mindfulness practice and social connectedness.

Clinical implications suggest clinicians should screen for trauma during global pandemics and similar collective traumas and encourage social connection to reduce depressive symptoms. Furthermore, using mindfulness interventions to target anxiety and depressive symptoms during treatment is warranted across cultural identities. Both social connectedness and mindfulness moderated anxious and depressive symptoms in trauma survivors during the most restrictive phases of the COVID-19 pandemic. Thus, these are important areas to explore in treating trauma and future global traumas. Medical and mental health professionals can examine the use of both and how these concepts differ to promote their use with clients across identities.

Author Statements

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Conflict of Interest

The authors declare no conflict of interest, financial or otherwise.

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