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Disparities and intersectionality in social support networks: addressing social inequalities during the COVID-19 pandemic and beyond

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The COVID-19 pandemic has brought social injustice and inequalities to the forefront of global public health. Members of marginalised communities, such as racial/ethnic and sexual minorities, and persons with disabilities, have been shown to be more vulnerable to certain consequences of the pandemic. Research suggests a protective role of social support in health and wellness promotion, yet little is known about the disparities in specific social support sources (i.e., family, friends, and a significant other) between marginalised populations and their counterparts. Also unclear is the role of intersections of these marginalised identities in social support structures affected by the pandemic. Hence, it is crucial to capture and characterise such differences and intersectionality in order to address social inequalities in a time of global crisis. To that end, we surveyed U.S. adults across 45 states to examine their social support from family, friends, and a significant other. Results revealed the disproportionate impacts of the pandemic on social support among racial/ethnic and sexual minorities and persons with disabilities. Additionally, we found that White individuals with a marginalised identity received less social support than their White counterparts but received a similar level of social support when compared with racial/ethnic minorities without additional marginalised identities. This article seeks to elucidate the social support disparities associated with disproportionately increased social isolation for marginalised populations due to socioeconomic disadvantages. Specific recommendations are provided for addressing issues around social disparities and inequalities. With the experience and awareness attained working with marginalised populations, mental health professionals, public health officials, and community stakeholders should be poised to attend to social capital inequalities for diversity, equity, and inclusion now and in the post-pandemic era.

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Introduction

The coronavirus disease 2019 (COVID-19) pandemic posed disproportionate threats to marginalised communities (e.g., racial/ethnic and sexual minorities, persons with disabilities) worldwide. Various detrimental outcomes emerged from the psychosocial burden of isolation, economic uncertainty, and civil unrest over the course of the pandemic. As a result of highly contagious severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and its variants, COVID-19 has disproportionately placed many marginalised groups at higher risk for infection and death (Killerby et al., 2020; Stokes et al., 2020). Aside from the disparities in COVID-19 morbidity and mortality, marginalised populations are at increased risk for poor mental and physical well-being due to the deleterious effects of the pandemic on both biopsychosocial and political dimensions (Gauthier et al., 2021; Moore et al., 2021).

Socioeconomic inequalities have disproportionately affected marginalised populations, such as racial/ethnic minorities, sexual minorities (e.g., LGBTQ+), and persons with disabilities, exacerbating health disparities. Members of these groups are more likely to struggle with mental health and/or economic insecurity issues that have been shown to restrict access to care and housing (Moore et al., 2021). Additionally, marginalised populations struggle more than their counterparts with the effects of COVID-19 prevention measures, such as lockdowns and social distancing requirements (Gauthier et al., 2021; Moore et al., 2021). In some cases, this can lead to social isolation. In other cases, this can lead to overcrowded housing that may contribute to weakened social support and exacerbate emotional problems and mental burden, and can even lead to strained family dynamics (Moore et al., 2021). Previous studies have suggested that social support can provide some protection for mental health and wellness (Gauthier et al., 2021; Moore et al., 2021). Little is yet known about the disparities in specific social support sources between marginalised populations and their counterparts. Also, to date, there has been a lack of literature that focuses on the effects of intersections of race/ethnicity, sexual orientation, and disability status on social support during the pandemic. Thus, it has never been more critical to capture and characterise such intersectional differences to address social inequalities in a time of global crisis.

Methods

This study was approved by the Office for Research Protections (ORP) at the Pennsylvania State University, approval number [STUDY00016378]. All participants provided informed consent. We used G*Power 3.1 statistical power analysis (Faul et al., 2007) to estimate the minimum sample size for data analysis. Results indicated that a sample size of at least 128 was necessary to provide an 80% power estimate, $\alpha = 0.05$, with a medium effect size ($d = 0.5$, $f = 0.25$) for independent sample t-tests and factorial analysis of variance (ANOVA). We surveyed US adults ($N = 1449$) across 45 states through the Qualtrics platform to examine their social support from family, friends, and a significant other (e.g., partner), identifying the disproportionate negative impacts of COVID-19 on racial/ethnic and sexual minorities and persons with disabilities. Perceived social support was measured using the 12-item Multidimensional Scale of Perceived Social Support (Zimet et al., 1988) which includes three subscales (i.e., family, friends, significant other). The Cronbach's α for the scale in this study population is 0.91. First, we performed independent sample t-tests to compare perceived social support from family, friends, and a significant other between marginalised individuals (i.e., racial minority, sexual minority, or with disabilities) and their counterparts (i.e., White, straight, or non-disabled). Second, we performed factorial ANOVA to detect the interactive effects of these demographic differences on social support. All analyses were conducted using IBM SPSS version 27.00. Two-sided p values < 0.05 were considered statistically significant.

Results

Participants predominantly identified as White (57.3%, $n = 830$), female (60.9%, $n = 883$), heterosexual (60.2%, $n = 872$), and non-disabled (66.9%, $n = 970$). Table 1 and Fig. 1 present results from independent sample t-tests. Figure 2 shows the statistically significant interaction between the effects of race/ethnicity and sexual orientation on social support from family.

Social support from family. Results (Table 1 and Fig. 1) from independent sample t-tests revealed that racial/ethnic minorities ($M = 19.74$, $SD = 6.47$) reported significantly less social support from family compared with White individuals ($M = 21.03$, $SD = 5.77$), t $(517.39) = 3.10$, $p < 0.01$. Sexual minorities ($M = 18.80$, $SD = 6.56$) reported significantly less social support from family compared with straight individuals ($M = 21.29$, $SD = 5.70$), t $(354.51) = 5.40$, $p < 0.001$. Persons with disabilities ($M = 18.94$, $SD = 6.75$) reported significantly less social support from family compared with non-disabled individuals ($M = 21.00$, $SD = 5.81$), t $(215.28) = 3.74$, $p < 0.001$.

Results (Fig. 2) from factorial ANOVA revealed a significant interaction between the effects of race/ethnicity and sexual

Table 1 Means, standard deviations, independent samples *t*-tests for social support.

Social support from	*M*	*SD*	*M*	*SD*	*t*-test
	Racial/ethnic minority		*White*		
Family	19.74	6.47	21.03	5.77	3.10**
Friends	21.63	5.28	22.67	4.68	3.26**
Significant Other	21.97	6.77	22.94	6.01	2.24*
	Sexual minority		*Straight*		
Family	18.80	6.56	21.29	5.70	5.40***
Friends	22.17	4.80	22.52	4.86	0.98
Significant Other	22.51	6.43	22.82	6.16	0.68
	With disabilities		*Without disabilities*		
Family	18.94	6.75	21.00	5.81	3.74***
Friends	21.69	4.97	22.53	4.84	2.06*
Significant Other	22.19	6.08	22.80	6.24	1.17

M = mean, *SD* = standard deviation.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

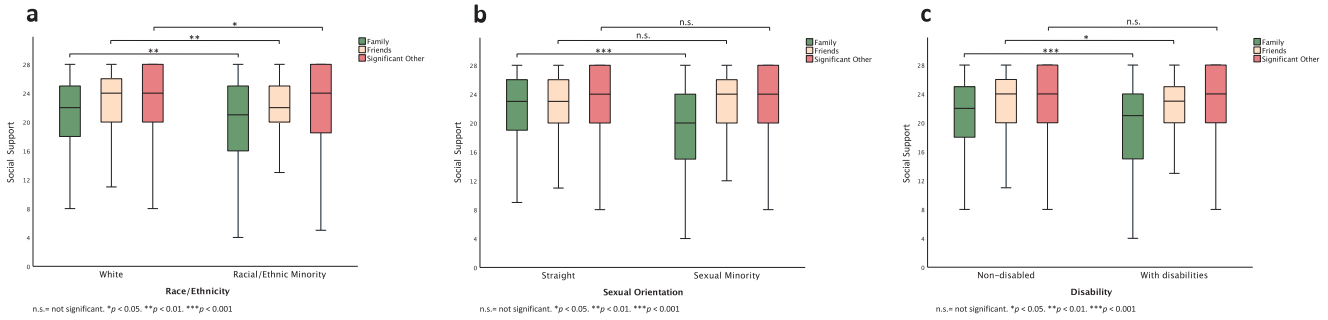

Fig. 1 Levels of social support from family, friends, and significant other across demographic groups during the COVID-19 pandemic, 2020–2021. Differences in social support between **a** White individuals and racial/ethnic minorities; **b** straight individuals and sexual minorities; **c** non-disabled individuals and persons with disabilities. (n.s. = not significant. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.).

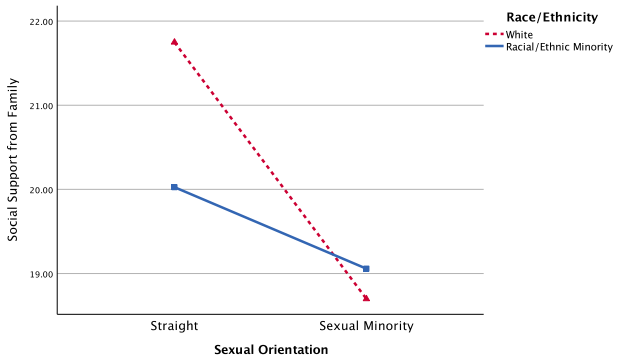

Fig. 2 Interaction between race/ethnicity and sexual orientation for social support from family. *Note*: All other nonsignificant interactions between variables are not presented.

orientation on social support from family, F (1, 1108) = 4.84, $p < 0.05$. A significant main effect emerged for sexual orientation, F (1, 1108) = 18.01, $p < 0.001$. Among White individuals, *straight* people reported significantly more social support from family compared with *sexual minorities* (*i.e., LGBTQ+*); however, no significant difference was found in social support from family between *straight* racial/ethnic minorities and racial/ethnic minority *LGBTQ+*. It is noteworthy that no significant difference was found in social support from family between White *LGBTQ+* and *straight* racial/ethnic minorities.

Moreover, there was no significant interaction between the effects of race/ethnicity and disability status on social support from family, F (1, 1130) = 0.81, $p = 0.37$. A significant main effect emerged for disability status, F (1, 1130) = 10.21, $p < 0.01$. Namely, among White individuals, *non-disabled* people reported significantly more social support from family compared with persons *with disabilities*; however, no significant difference was found in social support from family between *non-disabled* racial/ethnic minorities and racial/ethnic minorities *with disabilities*. No significant difference was found in social support from family between White persons *with disabilities* and *non-disabled* racial/ethnic minorities.

Social support from friends. Results (Table 1 and Fig. 1) indicated that racial/ethnic minorities ($M = 21.63$, $SD = 5.28$) reported significantly less social support from friends compared with White individuals ($M = 22.67$, $SD = 4.68$), t (1138) = 3.26, $p < 0.01$. However, no significant difference was found in social support from friends between sexual minorities and straight individuals. Further, persons with disabilities ($M = 21.69$, $SD = 4.97$) reported significantly less social support from friends compared with non-disabled individuals ($M = 22.53$, $SD = 4.84$), t (1132) = 2.06, $p < 0.05$.

Results from factorial ANOVA indicated that there was no significant interaction between the effects of race and sexual orientation on social support from friends, F (1, 1106) = 0.13, $p = 0.72$. However, a significant main effect emerged for race/ethnicity, F (1, 1106) = 5.90, $p < 0.05$. Namely, among *straight* individuals, racial/ethnic minorities reported significantly less social support from friends compared with White individuals; however, no significant difference was found in social support from friends between White *LGBTQ+* and racial/ethnic minority *LGBTQ+*. Additionally, no significant difference was found in social support from friends between White *LGBTQ+* and *straight* racial/ethnic minorities.

Moreover, there was no significant interaction between the effects of race/ethnicity and disability status on social support from friends, F (1, 1128) = 3.05, $p = 0.08$. No significant main effects emerged for either race/ethnicity or disability status. Additionally, no significant difference was found in social support from friends between White persons *with disabilities* and *non-disabled* racial/ethnic minorities.

Social support from significant other. Results (Table 1 and Fig. 1) showed that racial/ethnic minorities ($M = 21.97$, $SD = 6.77$) reported significantly less social support from a significant other (e.g., partner) compared with White individuals ($M = 22.94$, $SD = 6.01$), t (515.35) = 2.24, $p < 0.05$. However, no significant difference was found in social support from a significant other between sexual minorities and straight individuals. Likewise, no significant difference was found in social support from a significant other between persons with disabilities and non-disabled individuals.

Results from factorial ANOVA showed that there was no significant interaction between the effects of race/ethnicity and sexual orientation on social support from a significant other, F (1, 1108) = 0.18, $p = 0.67$. No significant main effects emerged for either race/ethnicity or sexual orientation. Additionally, no significant difference was found in social support from a significant other between White *LGBTQ+* and *straight* racial/ethnic minorities.

Moreover, there was no significant interaction between the effects of race/ethnicity and disability status on social support from a significant other, F (1, 1129) = 0.74, $p = 0.39$. No significant main effects emerged for either race/ethnicity or disability status. Additionally, no significant difference was found in social support from a significant other between White persons *with disabilities* and *non-disabled* racial/ethnic minorities.

Discussion

Findings from this current study suggest that racial/ethnic minorities are less likely than White individuals to have a robust social support system. Some racial/ethnic minorities are more likely to tend towards collectivism and seek support from communities (Gauthier et al., 2021). Given the racial/ethnic differences in social network size as well as religious affiliation before the onset of the pandemic (Gauthier et al., 2021), COVID-19 prevention guidelines that restricted in-person meetings had a greater negative impact on racial/ethnic minorities than White individuals. Consequently, racial/ethnic minorities received lower levels of social support than White individuals amid the pandemic. Further, findings suggest that sexual minorities might be more likely to experience strained familial relationships due to possible concealment of sexual orientation associated with parental disapproval and/or rejection (Moore et al., 2021). However, sexual minorities have commonly been shown to benefit from a sound social network that consists of friends and a significant other (Frost et al., 2016). Additionally, findings suggest that disabilities may affect the formation and maintenance of social connections with family and friends, and in turn, persons with disabilities might receive inadequate support due to the comparative lack of access to family members and friends (Rotarou et al., 2021). Many people resorted to digital devices to stay connected with family and friends amid lockdowns and social distancing requirements. Disabilities might restrict one's digital literacy to access supplementary sources of social support during the pandemic.

Intersections of race/ethnicity, sexual orientation, and disability. Through factorial ANOVA to examine the interactive effects between race/ethnicity, sexual orientation, and disability on social support from family, we found a significant interaction (race/ethnicity × sexual orientation) and main effects for sexual orientation and disability, respectively. Such findings indicate the different roles that sociodemographic factors play in informing social support from family. Although White individuals have more social support from family overall, those with marginalised identities (e.g., LGBTQ+, disabilities) receive less social support from family than their non-marginalised White counterparts, which may be due to ostracisation by their family members (Moore et al., 2021). In contrast, since the pandemic has put a disproportionate strain on family connections in racial/ethnic minorities (Gauthier et al., 2021), additional marginalised identities might play a limited role in social support from family among these populations.

In terms of social support from friends, no significant interactions (race/ethnicity × sexual orientation, or race/ethnicity × disability) were found in our models. Nonetheless, we found that a significant main effect emerged for race/ethnicity, controlling for sexual orientation. Members of both privileged and marginalised communities have all struggled with increased social isolation and loneliness during the pandemic (Liu et al., 2020); however, our findings suggest that friend-focused social support networks in White straight individuals may be the least likely to experience the negative social effects of the COVID-19 pandemic. One possible explanation is that some White straight individuals perceive less personal risk for COVID-19, have better access to resources (e.g., health care, social capital), and reside in less crowded communities (Nino et al., 2021; Vargas et al., 2021), so they may be less likely to adhere to public health policies and guidance, such as social distancing (Nino et al., 2021; Peacock et al., 2022). Consequently, they may engage in more social gatherings with friends, which can enrich and enhance their friend-focused social support networks (Peacock et al., 2022).

In terms of social support from a significant other (e.g., partner), no significant interactions or main effects emerged in our models. When this result was compared with friends and family, we might conclude that partners were more interdependent and committed to one another. Romantic relationships have these distinct features that differ from the interactions with friends and family, and thus, the social support exchanged between partners cannot be substituted by social support from friends and family (Furman and Shomaker, 2008). Given this central role of romantic relationships in adulthood, adults spend much of their time with their partners (Ratelle et al., 2013). Due to public health policies during COVID-19 (e.g., lockdowns, shelter-in-place), the intimacy between partners often increased as people tended to seek more social support from their partners during the pandemic (Vowels et al., 2021). This may help to interpret our results that showed consistently high levels of social support from partners across most demographic groups, regardless of marginalised identities.

Additionally, we could not find significant differences in all three sources of social support (i.e., family, friends, a significant other) between White LGBTQ+ individuals and straight racial/ethnic minorities, or White persons with disabilities and non-disabled racial/ethnic minorities. These findings suggest that the effect of a specific marginalised identity on one's social support may not statistically outweigh another marginalised identity during the pandemic. People with only one of these marginalised identities may experience unique challenges and difficulties in accessing social support, and thus, might have received less social support during the course of the pandemic (Ruprecht et al., 2021).

Implications. This current study highlighted disparities and intersectional differences in social support due to disproportionately increased social isolation for some marginalised populations in the United States, such as racial/ethnic minorities (e.g., people of colour), sexual minorities (e.g., LGBTQ+), and persons with disabilities. A supportive social network encompasses partners, family, friends, and peers, and it serves as a buffer against some of the detrimental effects of the COVID-19 pandemic on well-being. During the immediate aftermath, social support plays a critical role in the adaptation to adverse life events as well as in the prevention and mitigation of health issues across distressing life situations (Pengilly and Dowd, 2000).

Social connection, as the deep-seated human instinct, helps one to cope with emotional distress and enhances resilience during challenging times (Bavel et al., 2020; Williams et al., 2018). With the advancement of technological communication solutions and digital literacy in the general public, rich and synchronous online interactions can help people remain socially connected and help to generate empathy (Waytz and Gray, 2018). Nevertheless, COVID-19 mitigation measures (e.g., social distancing) have posed a threat to many social support systems, leading to disproportionate loneliness and social isolation in marginalised populations because of inequalities in digital literacy and access to communication technologies (Zhai, 2021).

Attention should be paid to addressing digital literacy and accessibility among marginalised populations. Governments and technology companies need to consider allocating funds and resources for digital literacy education and enhancing accessibility features in digital devices and services. The public and private sectors should also develop and promote online outreach programs that can provide marginalised populations with additional support, particularly during any resurgence of COVID-19. Furthermore, mental health professionals and credible public health authorities need to encourage marginalised individuals to secure social support through online platforms or

services when physical distancing is required to slow down the transmission of future COVID-19 variants.

The pandemic has brought social injustice and inequities to the forefront of global health. Disparities in social networks strikingly underscore the significance of acknowledging and understanding social capital inequalities in the United States. Connection to others is an essential and meaningful piece of people's lives. It serves as a crucial means for marginalised communities to maintain social ties and to establish and develop safety nets of support on which they can rely in times of crisis. Given that values like self-reliance and independence are often prioritised over connection and interdependence in the dominant U.S. cultural contexts (Escalante et al., 2021), the pandemic has highlighted the need to reexamine such preferences in values for ongoing human growth and development now and in the post-pandemic era.

Data availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Author contributions

YZ conceived of the presented idea and conducted the literature review and data collection/analysis. YZ and XD contributed to the writing and revision of this manuscript.

Competing interests

The authors declare no competing interests.

Ethical approval

This study protocol was reviewed and approved by the Office for Research Protections (ORP) at the Pennsylvania State University, approval number [STUDY00016378]. The authors assert that all research was performed in accordance with relevant guidelines/regulations and in accordance with the Helsinki Declaration of 1975, as revised in 2008.

Informed consent

All participants in this study were informed about the purpose of the study as well as the ways the data would be used. Informed consent was obtained from all participants.

Additional information

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