Developing an equitable intervention approach for communities of color: mental health and co-occurring physical health concerns in the context of the COVID-19 pandemic

Manuel Gutierrez Chavez,[1,] **Kiran Kaur,**[1] **Katherine J. W. Baucom,**[1,] **Ana Sanchez-Birkhead,**[2,3,4]

Grant R. Sunada,[5] **Valentine Mukundente,**[3,6] **Fahina Tavake-Pasi,**[3,7] **Edwin Eru Napia,**[3,8]

Jeannette Villalta,[3,4] **Anu Asnaani**[1,]

[1]Department of Psychology, University of Utah, Salt Lake City, UT 84112, USA
[2]College of Nursing, University of Utah, Salt Lake City, UT 84112, USA
[3]Community Faces of Utah, Salt Lake City, UT 84133, USA
[4]Hispanic Healthcare Task Force, Salt Lake City, UT 84108, USA
[5]Department of Family and Preventive Medicine, University of Utah, Salt Lake City, UT 84112, USA
[6]Best of Africa, Salt Lake City, UT 84133, USA
[7]National Tongan American Society, Murray, UT 84107, USA
[8]Sacred Circle Healthcare, Salt Lake City, UT 84111, USA
Correspondence to: A Asnaani, anu.asnaani@psych.utah.edu

Abstract

The COVID-19 pandemic has exacerbated disparities in mental health treatment for people of color in the USA. Meeting the needs of those most burdened by this disparity will require swift and tactical action in partnership with these communities. The purpose of this paper is to describe how a community-based participatory research approach was employed to assess the priorities and needs of four communities of color (African immigrant, Hispanic/Latino, Black/African American, and Pacific Islander) in a major U.S. city. A brief quantitative survey devised jointly by community leaders and the research team was deployed to community members ($N = 59$) in the fall of 2020. The most endorsed mental health issues across the communities were excessive worry (51%) and stress regarding COVID-19, racism, and immigration policies (49%). The most endorsed physical health concerns included sleep difficulties (44%), headaches, and backaches (each 39%). Physical symptoms predicted the endorsement of a mental health issue above and beyond COVID-19–related hardships, multiplying the odds of reporting an issue by 1.73 per physical health concern endorsed. Based on these findings, the community-research team conceptualized and proposed an evidence-based, effectiveness-implementation hybrid type-2 intervention approach for chronic worry and daily stress. This paper highlights detail on how the community-research team arrived at the proposed multilevel intervention that addresses community-stated barriers to mental health treatment (e.g., preferring trusted health workers to deliver emotional health treatments) and considers the burden of the additional stressful context of COVID-19.

Lay summary

Diverse community members and university researchers collaborated on the development of an equitable intervention approach for community members' mental health needs.

Keywords: Mental health, Physical health, Health disparities, Community-based research, Health equity

---

Implications

Practice: Community members from ethnic minorities are effective mental health research partners, despite the ongoing COVID-19 pandemic, and they should be involved from the start of project conceptualizations.

Policy: To reduce mental health disparities in ethnic minority communities, policymakers should explore task-shifting initiatives and consider expanding the scope of lay health workers who are well trusted in the communities they serve.

Research: Although this innovation has the potential to reduce barriers to mental health care, future research is needed to examine the strengths and drawbacks of interventions delivered by lay health workers to ethnic minority communities.

Introduction

Significant disparities in mental and physical health outcomes remain present in the USA among communities of color [1, 2]. For instance, communities of color have higher persistence of psychiatric illness despite lower lifetime risk, and are more likely to report that their major depressive disorder symptoms are disabling when compared to non-Hispanic Whites [3]. Additionally, the prevalence rate of diabetes alone and co-morbid diabetes and cardiovascular disease are about twice as high for Hispanics, and non-Hispanic Blacks compared to non-Hispanic Whites at ages 60 and 75 [4]. Meanwhile, despite this greater demonstrated need for healthcare services, communities of color tend to receive lower quality services in both mental and physical healthcare settings [5]. These disparate outcomes are associated with structural inequalities and resulting psychological stressors related to socioeconomic position, immigration status, racism and discrimination, and a historical distrust of researchers and clinicians [6].

Unfortunately, these disparities have been exacerbated by the SARS-CoV-2 (COVID-19) pandemic. For instance, the Center for Disease Control and Prevention's (CDC) provisional life expectancy estimates for 2020 showed that although life expectancy declined by 1.5 years for the U.S. population overall, Hispanics saw a decrease of 3.0 years and non-Hispanic Blacks saw a decrease of 2.9 years, whereas non-Hispanic Whites saw a lesser decrease of 1.2 years [7]. Furthermore, such race-related disparities do not appear to occur in a vacuum, with several studies showing how structural inequalities (such as percentage of residents differing by income level, race, and white-collar employment in specific zip codes) and policy implementation (such as differential work from home directives during a pandemic) are integrally related to health outcomes in communities of color [8].

In addition, access to mental healthcare has decreased due to COVID-related hardships such as job loss, loss of insurance or underinsurance, and a move to telehealth (for those with limited English or technology proficiency) [9, 10]. Prior to the COVID-19 pandemic, communities of color already faced other barriers to mental healthcare access, such as stigma, lack of treatments validated with these communities, and a lack of culturally sensitive treatment providers [11, 12]. Related to broader social inequalities driving health disparities as a result of the current pandemic, these communities are also facing higher COVID-19 exposure rates due to a higher likelihood of being essential workers, higher morbidity rates (and consequently greater experience of trauma of losing a loved one), and higher rates of unemployment, all of which have been independently linked to worse mental health outcomes [13]. Studies regarding mental and physical health needs of communities of color during the COVID-19 pandemic remain scarce yet valuable, as the effects of the pandemic will likely remain for years to come.

However, traditional, top-down, and linear research approaches to intervention work often limit stakeholder involvement and fail to take in the urgency and complexity of such ongoing health disparities experienced in such communities. Thus, meeting these communities' needs demands strategic actions that involve direct and equal partnership with the community members and organizations that serve them to address multiple layers of inequity. One such research approach, community-based participatory research (CBPR) [14], facilitates equal partnerships between researchers and community members (who are core investigators) at every step of the project. CBPR principles are closely tied to historical social justice principles (e.g., the sharing of power) that strive for equity for, and inclusion of, disadvantaged groups [15]. Despite its rise in popularity across disciplines (e.g., public health) [16], CBPR remains underutilized in the field of psychology [17]. Although psychology has incorporated a social justice lens to its academically stated goals and priorities, incorporation of CBPR and social justice concepts has largely remained at the theoretical level, rarely resulting in practical applications [17]. Just as the factors that influence access to mental healthcare are multifaceted, the interventions must be as well, in order to achieve equitable and sustainable results [18].

Our research team (which consists of clinical psychologists, researchers, and local community members and leaders) believes that CBPR and social justice principles have the potential to greatly promote health equity and address knowledge gaps from work conducted in communities of color. The present study utilized a CBPR and social justice-oriented approach to investigate the mental health needs and treatment-related priorities of four communities of color in a major U.S. city during the first year of the COVID-19 pandemic. The needs of community members were assessed with regard to the current sociopolitical and public health climate, and these factors were incorporated into creating a proposed intervention approach using CBPR methods. This methodology produces rich, participant-centered information, while building trust between researchers and the communities they serve to determine targets in need of intervention and the most acceptable, culturally adapted ways to implement such interventions. Thus, the aims of this paper were to (a) present how we assessed four racially and ethnically diverse communities' health needs during the COVID-19 pandemic using a CBPR approach and (b) describe these communities' reported top mental health and co-occurring physical health concerns and priorities. We then delineate how we utilized these data to generate a multi-level intervention approach rooted in clinical science and social justice against the backdrop of the COVID-19 pandemic.

Methods

Establishing an equitable community-research partnership

Per our first aim for this study, we utilized a CBPR approach from the ground up to meet both community and research priorities, starting with how our partnership was established (as described in detail elsewhere) [19]. Briefly here: the University of Utah's Community Collaboration and Engagement Team (CCET), which aims to support institutions, researchers, providers, and others in collaborating on research projects that address communities' health needs, initiated contact with the research team to elicit interest in collaborating with the Community Faces of Utah (CFU). CFU is a rich, long-term partnership between the State of Utah's Department of Health, University of Utah, and five diverse community organizations [20]: Best of Africa (BoA; African immigrants and refugees), Calvary Baptist Church (CBC; primarily Black/African Americans), Hispanic Health Care Task Force (HHCTF; Hispanic/Latino/a), National Tongan American Society (NTAS; Pacific Islanders), and Urban Indian Center of

Salt Lake (UIC; American Indians/Alaskan Natives). To learn more about and understand the needs of the communities, and to build trust with community leaders, the research team therefore began regularly attending CFU meetings. Through consistent follow-up and demonstration of how their suggestions were being incorporated and implemented, CFU leaders started expressing considerable openness to continued collaboration and acknowledged the mutual regard that had been fostered to establish a joint CFU-research team for all research endeavors described henceforth.

Study design

The CFU-research team agreed that our first steps required use of focus groups to understand how each of the CFU communities defined mental health and their current mental health priorities, the results of which are described in detail elsewhere [19], with the goal of using the data collected to guide the creation of a brief online survey that would be deployed to more community members, which is the focus of our examination in the present study. Specifically, the CFU-research team created a survey that asked community members about their interest in, barriers to, and specific target areas for intervention. Additionally, we extended the line of inquiry into the most frequently reported physical health concerns based on our focus group data revealing a holistic view to mental health that included one's physical well-being. The ultimate aim of both the focus group and survey data was to develop a treatment framework that could be tested and applied across communities (as we describe elsewhere) [19].

Participants

Community leaders recruited participants for our survey via purposive sampling; specifically, community leaders could use their discretion to contact members of their respective communities via the most culturally-appropriate way (e.g., word of mouth, calling members, and announcing at community meetings) and community leaders verified that, as requested, they recruited individuals who were open to talking about mental health from a range of ages, genders, and socioeconomic/occupational backgrounds, along with ensuring that their participants were not all from the same family units or individuals specifically known to have mental health distress in order to capture as representative sample of their communities for the survey. The only exclusion criteria were that participants could not have participated in the previous focus groups or be less than 18 years of age. Unfortunately, recruitment for this survey within Native American community was limited due to administrative leadership turnover, resulting in exclusion of UIC from current analysis. The total *N* for this study was 59 (39 female, 20 male).

Measures

Survey construction

Themes from the focus groups [19] guided the construction of the survey. Participants across communities defined mental or emotional health as the well-being that balances the emotional, physical, social, and spiritual parts of oneself. Many individuals conflated the term "mental health" with severe mental illness, and the preferred term that emerged was "emotional health." These findings helped shape the introduction and descriptions used in the survey (e.g., *As a reminder, mental or emotional health includes emotional, psychological,*

spiritual, and social well-being…). The CFU-research team agreed to keep the community member survey at a fifth-grade reading level with three descriptive response options on most questions. The HHCTF requested that the survey be available in Spanish for those who needed it (see [19] for more details on translation procedures). As requested by BoA, we hired a native Kirundi speaker as a live translator to support survey data collection, with a member of the research team present to answer any procedural/content meaning questions.

Survey items included descriptions, select all that apply response options, of emotional health symptom such as feeling sad (depression) and feeling a racing heartbeat, sweating, or tense muscles (anxiety), along with common definitions of chronic worry, suicidal ideation, and trauma. Daily stress arising from salient stressors during the fall of 2020 (COVID-19, racism, and immigration policies) was also included and rated with three options for how much participants endorsed these aspects impacted their emotional health (e.g., *Not at all*, *A little*, *A lot*). Stigma around mental or emotional health was another common theme across focus groups, and therefore questions about different forms of stigma were adapted from validated stigma scales and added to the survey (e.g., *I would feel ashamed of myself if I was having emotional health problems*) [21]. Additionally, questions regarding barriers to receiving treatment for emotional health were assessed (e.g., not having health insurance, fear of racism, lack of trust in providers, language barriers, not knowing where to go). Finally, a question regarding common physical health issues was included to better capture these communities' holistic views of emotional health. See Supplemental Material 1 to view the full survey and specific items in full.

Procedure

The present study was approved by the University of Utah's Institutional Review Board. The research team provided community leaders with a short description of the survey, consent form, and compensation details to share with interested community members. Interested participants provided verbal consent to have their contact information shared with the research staff. Upon receiving participants' contact information from community leaders, Qualtrics survey links were sent out via email, along with a copy of the consent information sheet and confirmation about survey length and compensation, in either English or Spanish. Study staff were available to support with technology and otherwise assist in completing surveys. Fourteen of the 15 HHCTF participants took the survey in Spanish, and 10 of the 15 BoA participants utilized live Kirundi translation when completing the surveys. The survey took 10–15 min to complete. Participants received a $10 gift card of their choice for their participation with contact information being unlinked to survey answers to protect confidentiality.

Data analyses

To describe communities' top mental health and co-occurring physical health concerns and priorities (Aim 2), data from the quantitative surveys deployed across the four communities were analyzed using The R Stats Package [22]. After conducting basic descriptive statistics, endorsed mental health issues were summed up to create a new variable with a range of 0–6 to utilize an ANOVA to determine if the total number of mental health issues endorsed differed between communities. This

sum variable was later dichotomized (MH) for use in logistic regression (i.e., 0 = *no mental health issues reported*, 1 = *at least one issue reported*). Similarly, total COVID-related hardships were computed by summing the total number of hardships endorsed (*range* = 0–6), as were physical health issues (PH; *range* = 0–8, after the "other" option was removed, due to very low endorsement and lack of clarity around whether submitted answers met the threshold for a physical health issue).

A series of logistic regression models were conducted using a binomial random component and the logit link function. The first model included the dichotomized MH variable as our outcome variable and COVID-related hardships serving as the predictor to test whether hardships alone were related to endorsing a mental health issue (Model 1). Next, COVID-related hardships and PH were entered simultaneously as predictors with MH as the outcome variable (Model 2). These two predictors were assessed for collinearity, and it was determined that there was no concern (*VIF* = 1.99). Model 1 was compared to an intercept-only model using the likelihood ratio test (LRT). Model 2 was then compared to Model 1, using LRT, to determine if PH was related to MH after controlling for COVID-related hardships. For all analyses, statistical significance was achieved at the $p < .05$ level.

RESULTS

Demographic characteristics of the sample

The gender ratio per community was as follows: 15 community members from BoA (African immigrant/refugee; 8 female, 7 male), 14 from CBC (Black/African American; 9 female, 5 male), 15 from HHCTF (Hispanic/Latino/a; 12 female, 3 male), and 15 from NTAS (Pacific Islander; 10 female, 5 male). The age range of all participants was 20 to 74 years (*M* = 45.9 years, *SD* = 15.0 years). Educational attainment varied: four (6.8%) did not attend any school; four (6.8%) did not obtain a high school degree; 12 (20.3%) held a high school degree; 20 (33.4%) had some college; 11 (18.6%) had a Bachelor's degree; and eight (13.6%) had an advanced degree.

Descriptive statistics

Total mental health issues endorsed did not differ significantly between communities (*M* = 1.54 problems, *SD* = 1.48 across entire sample; $F(3, 55) = .64$, $p = .59$). The most frequently endorsed mental health issue *across* communities was excessive worry (51%) with 15% of participants not endorsing any symptom (see Table A1 for list of items endorsed). There was an average of 2.24 physical health concerns reported, with the most frequently endorsed being sleep difficulties (44%) (Table A1). The most endorsed forms of coping were physical activity (66%), praying (64%), and spending time with family (64%). The most frequently endorsed perceived barriers to receiving mental health treatment were not having money or insurance (76%), therapists not knowing one's language or culture (58%), and a lack of trust in providers (42%). Finally, most participants reported that the COVID-19 crisis (58% "a lot," 31% "a little"), racial tensions (37% "a lot," 47% "a little"), and current politics (31% "a lot," 46% "a little") affected their emotional health.

Mental health, COVID-19, and co-occurring physical health symptoms

The average number of COVID-related hardships endorsed by participants was 2.78 (*range* 0–6) (see Table A1 for specific COVID-related hardships endorsed). In Model 1, the odds of reporting a mental health issue were multiplied by 1.52 per COVID-related hardship endorsed. At average COVID-related hardships, the odds of reporting a mental health issue were three people reporting an issue to one not reporting an issue [$\chi^2(1) = 4.57$, $p < .05$, compared to an intercept only model]. This model suggests that the odds of having a mental health concern increases per COVID-related hardship. Model 2 results suggest that physical health concerns endorsed were significantly associated with a reported mental health issue beyond COVID-related hardships [$\chi^2(1) = 6.66$, $p < .01$; compared to Model 1; see Supplementary Table 2 showing logistic regression results for both models]. Specifically, the odds of reporting a mental health issue at average COVID-related hardships endorsed (*M* = 2.78) and average physical health concerns endorsed (*M* = 2.24) were roughly four people reporting a mental health issue to one not reporting an issue.

Discussion

As per the first aim of this study, we wanted to illustrate the successful application of CBPR methods in the examination of mental and physical health disparities, with the eventual goal of addressing stark health inequities for communities of color that have plagued the healthcare field in the USA. The community-research partnerships we established have guided interventions that are informed and designed collaboratively with the communities themselves, and as we described in the methods and in some of our previous writing [19] the values of equality and shared priorities guided each step of the process, from the very establishment of our partnership, through to the creation of the ultimately-pursued scientific idea, its adequate (and culturally responsive) implementation, and critical analysis of findings. This CBPR-infused approach empowered all stakeholders involved, leading to the development of a testable intervention approach that is responsive to communities' needs both in content and form, in keeping with social justice frameworks [16].

Our Aim 2 analysis of the quantitative surveys revealed that chronic worry and daily stress about current sociopolitical events were perceived as most problematic by each of the communities, consistent with the general mental health picture being observed in the context of COVID-19 [23]. Importantly, despite the cultural and historical differences among our four target communities, there were consistent barriers raised across the communities, namely, cost of treatment, lack of culturally competent or same-language therapists, and lack of trust in mental health providers. Although these barriers are not novel and are consistent with a 2016 report from the Office of Health Disparities in Salt Lake City that utilized a multicultural sample and found nearly identical results, they highlight the continued need for community-engaged innovations in this local context [24]. Furthermore, specific physical health symptoms (i.e., headaches, backaches, and sleep difficulties), all of which are consistently observed among those experiencing chronic worry, were highlighted as problem areas frequently occurring across all four communities in our study. Our analysis further confirmed these

communities' holistic view of mental health and the relevance of physical health indicators to overall feelings of wellness in communities of color [19], as physical health concerns predicted mental health issues above COVID-related hardships. This finding suggests that physical health symptoms should be measured as an outcome at a minimum, and ideally, should be included in the interventions for health in these communities more broadly.

That said, despite our statistical modeling, these mental health and physical concerns cannot be separated from the experiences of the COVID-19 pandemic for our participants, suggesting that health disparities do not occur in a vacuum and are importantly linked to other contextual and social stressors such as the current public health crisis [23]. For instance, community members reported being most bothered by the social isolation and loss of social events due to public health guidelines; these two hardships alone were associated with greater mental and accompanying physical health concerns, suggesting that consideration of what these specific guidelines might mean for ethnically and racially diverse communities in future interventions aimed at addressing these health disparities. Finally, the most common adaptive coping mechanisms noted (i.e., physical activity, praying, spending time with one's family) informed us on how we may incorporate preferred methods of coping more systematically (and differentially, by specific community) into any intervention efforts moving forward.

Creation of a data-driven and multi-level intervention

In continued close partnership with our community collaborators (as exemplified in the creation of the survey study per Aim 1), we utilized data findings from the quantitative surveys in Aim 2 (in conjunction with previously collected qualitative data) [19] to propose a testable intervention grounded in clinical science and social justice. In addition to identifying the top mental and physical health concerns for these communities, our survey findings highlighted that any proposed interventions must be delivered affordably and by providers trusted by the community, with the goal of empowerment and building capacity within these communities. Furthermore, long-term sustainability was important to the stakeholders involved in our analysis of the survey findings. As a result, the CFU-research team agreed upon a hybrid effectiveness-implementation approach to targeting chronic worry and daily stress (primary targets) and physical health concerns and depression (secondary targets) across CFU communities [25].

As part of this multilevel approach, CFU leaders encouraged us to think about how we could partner with community health workers (CHWs) who already deliver health information to CFU and other local communities and who are trusted by members of the community. Through CFU's support and input, the research team approached the Utah Department of Health (UDOH), who oversees a CHW workforce section and provides resources and trainings to this workforce to manage community health needs across the state. Our community partners helped us to realize that UDOH would be a crucial organization to add as a partner to promote equitable and sustainable interventions in a number of under-resourced communities. We then engaged in a series of discussions with CHW section core leadership, other UDOH administrators, and through full-group meetings with the larger CHW work-

force itself, brought our findings back to our community collaborators, and then jointly devised a multi-level intervention approach to meet the communities' needs.

Specifically, this intervention approach has two levels with corresponding outcomes. First, CHWs will be trained in evidence-based skills for chronic worry, i.e., mindfulness to assist with disrupting the worry process by helping individuals to re-anchor to the present, in conjunction with values-based strategies to assist individuals to engage in actions that are most effective in addressing life stressors and which can create resilience/hopefulness [26]. Second, we will monitor patient outcomes (e.g., chronic worry reduction, co-occurring depression symptoms, improvements in quality of life and physical health indices) and patient ratings of acceptability and feasibility of the intervention in a minimum of three patients treated by each of our target of 100 CHWs.

However, based on our collaboration with the CFU communities, these strategies would be further culturally adapted to address the unique social determinants/barriers and incorporate the culturally-congruent coping strategies (while still accounting for individual differences) for each community (as we discuss in more detail elsewhere [19]). At the CHW-level, we will measure implementation outcomes such as treatment utilization by CHWs and their fidelity to treatment strategies, as done in previous studies that succeeded in addressing symptoms via CHWs [27]. Specifically, to maximize fidelity of the intervention strategies employed, we have successfully engaged one of the creators of this intervention to serve as a collaborator, trainer, and supervisor on this work throughout the training and implementation period. Importantly, the intervention is meant to be sustainable as we have also agreed to add this intervention training into the existing CHW training curriculum that is delivered by UDOH and six partner agencies across the state that provides training credentials to CHWs. This will ensure that such an intervention continues to be taught and delivered to those struggling with chronic worry and daily stress (which per our survey findings are likely to continue to be particularly elevated mental health phenomena in communities of color due to the COVID-19 pandemic), providing a sustainable, acceptable, and yet cost-effective option that has been demonstrated in other studies utilizing the CHW workforce [28].

Sharing power through CBPR

From a CBPR-process perspective, the CFU-research team and UDOH CHW stakeholders met regularly throughout the creation of this intervention and all partners were encouraged to voice concerns and suggestions for the intervention and the study designed to test its effectiveness, and these various concerns were incorporated into the subsequent study design. For example, CFU leadership reminded the research team of the mistrust that community members would have of university staff collecting their mental health information. Thus, the proposed study has budgeted for CHWs to serve as a project coordinator and independent evaluators, thereby further building capacity within the community to conduct such work. Similarly, the CHW leadership was concerned about how we would house and make training on the intervention available to CHWs even after testing of the intervention (from a research perspective) was complete, and it was through this concern that we worked with our treatment expert and the UDOH administration to ensure we could develop written

and recorded trainings that are indefinitely housed within the CHW core curriculum even after the testing phase is completed. Through transparent collaboration, a variety of community partners and the research team have been treated as equal contributors throughout the intervention development and research process, from the way funds are allocated for grants, to co-authorship on papers, to data interpretation, and subsequent creation/promotion of the intervention designed to target the most pressing community mental health needs, in line with sound CBPR principles [14].

Finally, such an intervention is not only practically and scientifically testable, but it is also grounded squarely in the social justice movement by empowering our community partners to clearly state their needs and preferences (with the research team vocally advocating for the funding of such treatment services and training infrastructure), both of which are central to robust diversity science approaches [29]. Importantly, this approach lets us address the commonalities among the communities we partnered with, but makes room for us to address their unique cultural differences (e.g., by modifying our intervention approach per each community's needs to include different languages for delivery, incorporation of culture-specific coping strategies, or treatment formats that are most acceptable). Such a flexible and testable treatment approach (which still incorporates evidence-based treatment strategies and focuses on the same target areas across communities) enables us to incorporate intersectional identity factors that extend beyond racial identity such as gender, age, socioeconomic status, etc., to further meet compounding inequities due to other identity facets.

Limitations and future directions

First, our sample size was small. However, our aim was not to produce large-scale prevalence data, but rather to complement previously collected rich qualitative data and to provide insight into the needs of a representative sample of four different communities of color in a major urban setting. Second, although the measure for the study was not validated, aspects of the survey came from validated measures (e.g., questions regarding stigma) [21]. Importantly, the survey was created in collaboration with community leaders to ensure that community members could readily comprehend and respond to questions (e.g., using only 3 Likert-type options), in line with best practices for CBPR. Third, we recognize that not all communities of color have the same experiences across the nation, and therefore individuals residing in the Salt Lake Valley do not necessarily reflect these same communities' experiences elsewhere, potentially limiting generalizability. Relatedly, the purposive sampling technique (which we have used widely when working with community partners and is in line with good CBPR principles [19]) might inherently have some bias given community leaders sampled individuals they knew would be open to talking about mental health to participate in the study. To this end, we believe that by anonymizing responses (so that even those who are stigmatized felt that they could share) and requesting community leaders to supplement their recruitment with broadly broadcasting the survey in larger community groups instead of only to specific individuals, this selection bias was somewhat mitigated. Fourth, there was an unexpected change in leadership at the UIC site that interrupted our team's ability to recruit interested participants from this community within the time frame needed for survey data collection. This highlights one of the unique challenges to CBPR work in that when there are turnover or administrative changes to a community site, it takes time to re-establish trust and partnership with the new leaders of that community, and this is something to be mindful of in order to have time accounted for within the research timeline to absorb such changes. Lastly, we were unable to fully investigate the needs of different intersectional identity markers (e.g., religious backgrounds and sexual/gender minority statuses), which are fundamental to our understanding of health disparities in physical and mental health concerns in communities of color. Future studies should examine how these aspects influence the relationship between mental and physical health.

Conclusion

This study adds not only to the robust CBPR literature but also to its growing cross section with clinical psychology. This project illustrates CBPR approaches within mental health disparity research, with an added feature of describing how this work can be conducted within the constraints and backdrop of a public health crisis such as COVID-19. We hope that more researchers in psychology will incorporate CBPR principles by sharing power with their participants, and this study provides a helpful roadmap on what that may look like, from understanding community needs, through to devising and implementing interventions to address existing health disparities in specific communities. In addition, we used an evidence-based conceptualization of mental health but were flexible in allowing this construct to be continuously molded by the more holistic (spiritual and physical) conceptualization of four racially and ethnically diverse communities. This was indeed supported by our finding that physical health concerns explain some of the likelihood of endorsing a mental health issue. Therefore, this bi-directional partnership resulted in both parties learning and developing from one another to understand the phenomena at hand and issues affecting it more comprehensively. Finally, we recognize that employing CHWs as stress and worry interventionists may be innovative, but it is merely a stop-gap measure in the face a health system that cannot equitably care for all the people living in the USA. Certainly, these and other efforts as outlined in this study need to be combined with a continued effort to advocate for national-level policy changes to the U.S.'s healthcare system by researchers dedicated to addressing both mental and physical health inequities. Our joint advocacy efforts have the potential to guarantee healthcare as a right to all to alleviate current health disparities for communities of color.

Supplementary Material

Supplementary material is available at *Translational Behavioral Medicine* online.

Acknowledgements

Compliance with Ethical Standards

Conflicts of Interest: All authors declare that they have no conflicts of interest.

Authors' Contributions: All authors were involved in the preparation of this manuscript and read and approved the final version.

Ethical Approval: The University of Utah Institutional Review Board reviewed all study procedures. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Transparency Statements

Study registration: This study was not formally pre-registered.

Analytic plan pre-registration: The analysis plan was not formally pre-registered.

Data availability: De-identified data from this study are not available in a public archive. De-identified data from this study will be made available (as allowable according to institutional IRB standards) by emailing the corresponding author.

Analytic code availability: Analytic code used to conduct the analyses presented in this study are not available in a public archive. They may be available by emailing the corresponding author.

Materials availability: Materials used to conduct the study may be obtained by emailing the corresponding author.

Appendix

Table A1 | Endorsed mental health concerns, COVID-related hardships, and physical health concerns in community members ($N = 59$)

Mental health concerns	%
Worry	50
Contextual stressors	49
Depression	42
Trauma	27
No concerns	15
COVID-related hardships	**%**
Social isolation	80
No religious/community events	66
Feelings of uncertainty	54
Employment or financial loss	31
COVID diagnosis (self or other)	25
Loss of childcare support	22
Physical health concerns	**%**
Trouble sleeping	44
Fatigue	41
Headaches	39
Back pain	39
Joint pain	25
Stomach problems	15
Dizziness	10
Chest pain or shortness of breath	5

Twenty-five percent of participants reported no physical health concerns. All participants reported at least one COVID-related hardship. Contextual stressors = Stress or anxiety related to COVID-19, racism, and immigration policies specifically.

References

1. Chetty R, Stepner M, Abraham S, et al. The association between income and life expectancy in the United States, 2001–2014. *JAMA*. 2016;315(16):1750–1766. doi:10.1001/jama.2016.4226.

2. De Luca SM, Blosnich JR, Hentschel EAW, King E, Amen S. Mental health care utilization: how race, ethnicity and veteran status are associated with seeking help. *Community Ment Health J*. 2016; 52(2):174–179. doi:10.1007/s10597-015-9964-3.

3. Williams DR, González HM, Neighbors H, et al. Prevalence and distribution of major depressive disorder in African Americans, Caribbean Blacks, and non-Hispanic Whites. *Arch Gen Psychiatry*. 2007;64(3):305–315. doi:10.1001/archpsyc.64.3.305.

4. Davis J, Penha J, Mbowe O, Taira DA. Prevalence of single and multiple leading causes of death by race/ethnicity among US adults aged 60 to 79 years. *Prev Chronic Dis*. 2017;14:160–241. doi:10.5888/pcd14.160241.

5. Cook BL, Zuvekas SH, Carson N, Wayne GF, Vesper A, McGuire TG. Assessing racial/ethnic disparities in treatment across episodes of mental health care. *Health Services Res*. 2014;9(1):206–229. doi:10.1111/1475-6773.12095.

6. Stein Merkin S, Basurto-Dávila R, Karlamangla A, et al. Neighborhoods and cumulative biological risk profiles by race/ethnicity in a national sample of U.S. adults: NHANES III. *Ann Epidemiol*. 2009;19(3):194–201. doi:10.1016/j.annepidem.2008.12.006.

7. Arias, E, Betzaida T.-V, Ahmad F, Kochanek K. *Provisional life expectancy estimates for 2020*. Vol. 10. Issue 010. National Centre for Health Statistics; 2021. doi:10.15620/cdc:107201

8. Mendoza DL, Benney TM, Ganguli R, et al. The role of structural inequality on COVID-19 incidence rates at the neighborhood scale in urban areas. *COVID*. 2021;1(1):186–202. doi:10.3390/covid1010016.

9. Gemelas J, Davison J, Keltner C, Ing S. Inequities in employment by race, ethnicity, and sector during COVID-19. *J Racial Ethn Health Disparities*. 2021. doi:10.1007/s40615-021-00963-3.

10. Ruprecht MM, Wang X, Johnson AK, et al. Evidence of social and structural COVID-19 disparities by sexual orientation, gender identity, and race/ethnicity in an urban environment. *J Urban Health*. 2021;98(1):27–40. doi:10.1007/s11524-020-00497-9.

11. Leong FTL, Kalibatseva Z. Cross-cultural barriers to mental health services in the United States. *Cerebrum*. 2011;5. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3574791/.

12. Lu W, Todhunter-Reid A, Mitsdarffer ML, Muñoz-Laboy M, Yoon AS, Xu L. Barriers and facilitators for mental health service use among racial/ethnic minority adolescents: a systematic review of literature. *Front Public Health*. 2021;9. doi:10.3389/fpubh.2021.641605.

13. Holman AE, Thompson RR, Garfin DR, Silver RC. The unfolding COVID-19 pandemic: a probability-based, nationally representative study of mental health in the United States. *Sci Adv*. 2020;6(42):1–18. doi:10.1126/sciadv.abd5390.

14. Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: assessing partnership approaches to improve public health. *Annu Rev Public Health*. 1998; 19:173–202. doi:10.1146/annurev.publhealth.19.1.173.

15. Collins SE, Clifasefi SL, Stanton J, et al. Community-based participatory research (CBPR): towards equitable involvement of community in psychology research. *Am Psychol*. 2018;73(7):884–898. doi:10.1037/amp0000167.

16. Ortiz K, Nash J, Shea L, et al. Partnerships, processes, and outcomes: a health equity–focused scoping meta-review of community-engaged scholarship. *Annu Rev Public Health*. 2020;41(1):177–199. doi:10.1146/annurev-publhealth-040119-094220.

17. Rodriguez Espinosa P, Verney SP. The underutilization of community-based participatory research in psychology: a systematic review. *Am J Community Psychol*. 2021;67(3–4):312–326. doi:10.1002/ajcp.12469.

18. Trickett EJ, Beehler S. The ecology of multilevel interventions to reduce social inequalities in health. *Am Behav Sci*. 2013;57(8):1227–1246. doi:10.1177/0002764213487342.

19. Asnaani, A, Sanchez-Birkhead, A, Kaur, K, et al. Utilizing community partnerships to devise a framework for cultural adaptations to evidence-based mental health practice in diverse communities. *Cognitive and Behavioral Practice*. (in press).

20 . Drits-Esser, D, Coulter, H, Mannello, MC, et al. The community faces model: community, University and Health Department Partners Thriving together for effective health education. *Collaborations (Coral Gables, Fla.)*. 2019;2(1):10. doi:10.33596/coll.29.

21. Vogel DL, Wade NG, Haake S. Measuring the self-stigma associated with seeking psychological help. *J Couns Psychol*. 2006;53(3):325–337. doi:10.1037/0022-0167.53.3.325.

22. R Core Team. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing; 2014. http://www.R-project.org/

23. Cénat JM, Blais-Rochette C, Kokou-Kpolou CK, et al. Prevalence of symptoms of depression, anxiety, insomnia, posttraumatic stress disorder, and psychological distress among populations affected by the COVID-19 pandemic: a systematic review and meta-analysis. *Psychiatr Res*. 2020;295:113599. doi:10.1016/j.psychres.2020.113599

24. Diez D, Espinel C, Fitisemanu J, Okada B, Wright T. 2016. *Behavioral and Mental Health Provider Assessment Summary*. https://health.utah.gov/disparities/data/ohd/BHMH-SummaryReport.pdf

25. Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. *Med Care*. 2012;50(3):217–226. doi:10.1097/MLR.0b013e3182408812.

26. Fuchs C, Lee JK, Roemer L, Orsillo SM. Using mindfulness- and acceptance-based treatments with clients from nondominant cultural and/or marginalized backgrounds: clinical considerations, meta-analysis findings, and introduction to the special series. clinical considerations in using acceptance. *Cogn Behav Pract*. 2013;20(1):1–12. doi:10.1016/j.cbpra.2011.12.004.

27. Barnett ML, Gonzalez A, Miranda J, Chavira DA, Lau AS. Mobilizing community health workers to address mental health disparities for underserved populations: a systematic review. *Adm Policy Ment Health*. 2018; 45(2):195–211. doi:10.1007/s10488-017-0815-0.

28. Vaughan K, Kok MC, Witter S, Dieleman M. Costs and cost-effectiveness of community health workers: evidence from a literature review. *Hum Resour Health*. 2015;13(1):71. doi:10.1186/s12960-015-0070-y.

29. Lau AS, Chang DF, Okazaki S. Methodological challenges in treatment outcome research with ethnic minorities. In Kazdin AE ed. *Methodological Issues and Strategies in Clinical Research*. 4th ed. Washington, DC: American Psychological Association; 2016;403–413. doi:10.1037/14805-026.