

Peer Review File

Article information: <https://dx.doi.org/10.21037/mhealth-22-19>

Reviewer A

The authors report on an important topic and their research work will contribute to the existing literature. Overall, the manuscript is well written with enough details in different sections. Tables are informative. Below are comments/concerns for the authors to consider.

Comment 1: Abstract, include more data in the results section with numbers and %, rather than general statements.

Reply 1: Given the breadth of the data since it is a mixed-methods study, we are unable to provide additional information in the results section given the word limit. We did add additional information overall to improve clarity of the abstract.

Changes in Text: Page 2

Comment 2: Introduction, include any a priori hypotheses.

Reply 2: Given the nature of our qualitative data analysis, we did not have a prior hypotheses. We have now included a priori hypotheses related to our quantitative findings in the text.

Changes in Text: (Pages 9-10)

Comment 3: Methods, include more details for the qualitative analysis methodology. For example, inductive vs. deductive coding, independent coding, inter-rater reliability, etc. Also, include references for the approach used.

Reply 3: The research team used a team approach to developing the codes and codebook, which reduced bias related to having one researcher code the entirety of the qualitative data. Despite this, every member of the research team did not code every transcript independently, so inter-rater reliability could not be established..

Changes in Text: We have expanded upon the description of the qualitative analysis on Pages 16-17, and we have highlighted our inability to describe inter-rater reliability as a limitation of the study on Page 43.

Comment 4: Discussion, the authors could consider including a paragraph on study strengths.

Reply 4: Thank you for this feedback, we have now added additional content outlining the strengths and unique contributions of this study.

Changes in Text: (Pages 44-45)

Comment 5: Discussion, the authors should expand and elaborate more on how their findings support or contrast available literature and provide suggestions for future research directions that would address existing knowledge gaps.

Reply 5: Thank you for this feedback, we have now added additional content outlining future research directions that would address existing knowledge gaps.

Changes in Text: (Pages 44-45)

Reviewer B

I find the topic to be very compelling and really appreciate what the authors are trying to do with the sample that they sought and the measures that they used. This article utilized a mix-method approach to examine the culturally adaptive mhealth intervention for African American young adults. Their findings have significant practical implications for mhealth intervention development specifically for AA populations in the future. However, there are a few issues with the current version of the manuscript that I'm concerned about.

Comment 1: Introduction (line 164-169): It looks like Murry et al. (2018) have already conducted a study on culturally adapted mHealth study on American Americans with a different sub-population (rural families). How the current study is distinct from previous research here besides the difference in sampling? Or what are the unique vulnerabilities associated with Black young adults that are different from rural families that may also include young adults in the household?

Reply 1: Thank you for this question. The current study is distinct is that it uses a mixed-methods approach to explore specific barriers to mHealth use among African American young adults, highlight desired features and content wanted by this group in mHealth interventions, and evaluate current mHealth options. This is distinct from Murry et al.'s (2018) study in that they are piloting an established mHealth intervention, based on an already establish intervention, for a specific mental health concern. The findings from our study are meant to inform mHealth development as a whole, and potentially has wide applicability to a variety of mHealth interventions for African American young adults. The limitation of our sample and unique vulnerabilities for African American young adults from other backgrounds is mentioned on Page 43 in the limitations section.

Changes in Text: N/A

Comment 2: The current study (line 206) and the result section (starts line 456): I noticed the issue associated with the first research question ("what are African American young adults' perceptions of the associations between their racial

identity and experiences of discrimination, mental health, and mental health treatment seeking attitudes”) while reading the results – so I will bring it up again later – It included too many small different components. Moreover, in the result section, participants mentioned race-related factors associated with mental health and treatment other than perceived discrimination and racial identity (e.g., social support, practitioner’s race). I think the authors should consider revising this first research question to be more inclusive - “race-related factors (e.g., racial discrimination) associated with mental health and mental health treatment attitudes”. By doing so, they should add more lit review on other race-related factors affecting mental health treatment attitude, as I know there is a lot of research on the significance of practitioner-client race match.

Reply 2: Thank you for this feedback. We have revised the first research question in line with the reviewer’s recommendation. We have retained the initial version of our literature review. We believe that given that our thematic analytical approach relied on using the data collected to inform our subsequent findings/conclusions, and there are specific themes that were initially outside the scope of our literature review, but these findings are expanded upon with relevant literature citations in the Discussion section.
Changes in Text: Page 9

Comment 3: Methods (line 269): Participants first completed the quantitative measures via the Qualtrics online survey software as they waited for the focus group session to begin. The focus group asked about mental health and mental health treatment (e.g., “What is your perception of mental health and mental health treatments?”). There may be a priming effect of finishing a survey on racial discrimination and then discussing mental health. It can be a limitation of the study.

Reply 3: This has been noted as a limitation of the study, and the potential strength of the study is that this helped with recall of racism-related experiences during the focus groups, which is also noted.

Changes in Text: Page 43

Comment 4: Results (Line 409): In the intro and methods, the authors presented the qualitative questions and measures first, but in the results, they presented the quantitative results first. The order of the results should follow the order of the research questions.

Reply 4: Thank you for highlighting this. We have now revised the manuscript so that the quantitative approach is presented before the qualitative approach in the introduction and method sections.

Changes in Text: Pages 12-16

Comment 5: Results (Line 409-433): In addition to means and SDs, authors should present the frequencies and percentages that are sometimes more meaningful, for example, how many percent of young adults had more than one vicarious ORD victimization experience per month in the past 6 months?

Reply 5: Frequencies have been included to add additional context for the racial discrimination variables. Frequencies were not included for the other variables (e.g., racial identity and mHealth attitudes) given the nature of the constructs and how they were measured.

Changes in Text: Page 18

Comment 6: Results (starts Line 456): It took me a while to process the first part of the qualitative results, and I summarized it here. The authors classified the five themes for the first research question as “culturally risk factors for mental health – also mentioned a little about treatment at the end”, “culturally protective factors for mental health and treatment”, “culturally specific barriers to utilizing mental health services”, and two themes around systemic oppression in healthcare, including “High mental health treatment utilization rate in White Americans” and “Lack of African American practitioners”. Authors should mention the rationale for ordering the themes in this way - are they ordered based on the highest frequency of mentioning? Otherwise, I would recommend an alternative way of organization, for example, risk factors for mental health treatment utilization should stay together, including the “push through” values, family pressure, lack of awareness, etc. They can either separate the "mental health" with "mental health services", or just combine theme one with theme three.

Reply 6: The themes are organized in the order of how the questions were posed to focus groups, as outlined in the method section. Given our deductive approach of analysis, we believe that presenting the themes in order of how the data is obtained is most reflective of our data.

Changes in Text: N/A

Comment 7: Discussion (Line 1134): It’s very interesting that assimilationist ideology was positively associated with stronger desires for culturally-adapted mHealth and the authors had a good explanation for that. But I had to look at the D1 table to check whether assimilationist ideology was related to any other concepts (e.g., nationalist) in the racial identity scale to make sure these aspects were independent and not confounding each other. The authors can mention this lack of association in their results section to inform readers.

Reply 7: Thank you for this comment. Based on our theoretical framework of racial identity beliefs (Sellers et al., 19978, it is assumed that racial identity variables are multidimensional (e.g., levels of each racial identity dimension varies on an individual

basis). Although there may be a lack of association across the sample, there may be other associations within individuals and using a profile approach to explore relationships between racial identity dimensions within individuals (i.e., Willis & Neblett, 2018; Willis & Neblett, 2020), is outside of the scope of this paper, especially given the sample size. Because of this, we believe that the current presentation of correlations is the best way to present this information.

Changes in Text: N/A.

Sellers, R. M., Smith, M. A., Shelton, J. N., Rowley, S. A. J., & Chavous, T. M. (1998). Multidimensional model of racial identity: A Reconceptualization of African American racial identity. *Personality and Social Psychology Review*, 2(1), 18–39. <http://doi.org/10.1207/s15327957pspr0201>

Willis, H. A., & Neblett Jr, E. W. (2018). OC symptoms in African American young adults: The associations between racial discrimination, racial identity, and obsessive-compulsive symptoms. *Journal of obsessive-compulsive and related disorders*, 19, 105-115.

Willis, H. A., & Neblett, E. W. (2020). Racial identity and changes in psychological distress using the multidimensional model of racial identity. *Cultural Diversity and Ethnic Minority Psychology*, 26(4), 509.

Reviewer C

Overall, this is an important paper that is a gap within the existing field of research. Some of the data presents original ideas and contributions to this important research domain. Well done to the authors.

Comment 1: I think the fact that this paper addresses an important gap should be more explicitly stated in the introduction along with the fact that the majority of studies of apps tend to have samples that are primarily white and female this point can be referenced in the following paper. Eisenstadt et al. (2021) Mobile Apps That Promote Emotion Regulation, Positive Mental Health, and Well-being in the General Population: Systematic Review and Meta-analysis. Further, I think it would be worth listing what apps currently exist that are culturally adapted for Black users or minority ethnic groups and potentially explore why there are not more apps designed in this way, as well. For example, Pacifica is an example of an app that has been developed and there are some other studies that are important to note in the introduction for particular ethnic groups.

Reply 1: Thank you, we have stated the gap we are addressing and the limitation of

previous mHealth studies using the reference you provided. In terms of the Pacifica app, it is unclear if the app was designed to be culturally-tailored for African Americans. Although studies of Pacifica's effectiveness include African Americans in the sample, it is unclear if culturally-relevant elements are in the app, or if African Americans were included in the development phase. Other apps that currently exist for Black users are described in the Method section, particularly when we discuss the apps that were included in the evaluation component of our study (i.e., The Safe Place app).

Changes in Text: Pages 8-9

Comment 2: The sample is quite small to conduct quantitative analysis. Did you conduct a power analysis in relation to sample size? I think the information about the sample would be better as a table.

Reply 2: Thank you for this comment. We did not conduct a power analysis given that this was a mixed-methods study, and we only intended to explore correlational associations in the data, and not make inferential conclusions. This is also noted as a limitation of the study (page 43). Some of the information about the sample (e.g., age, gender, socioeconomic status, etc.) are included in Table 1, and the information in the text is included to provide additional context that's not easily ascertained in the table.

Changes in Text: N/A

Comment 3: The description of thematic analysis and why it is apt for this study was very brief, some description of the steps of TA would be helpful. I also think a reference that explains why focus groups or mini focus groups are a good method to collect this type of data. Please can you add some references as to why you took a specific approach towards the quantitative analysis?

Reply 3: In line with a reply to another reviewer, more information about thematic analysis was included on pages 16-17. Information about the utility of mini focus groups on pages 11-12 (i.e., Greenbaum, 2000). Correlational analyses was the primary quantitative approach given the small sample size, which limits our ability to conduct inferential statistics.

Comment 4: I'm not sure if this journal uses APA but if you are following APA they have specific guidelines for the presentation of qualitative quotes in the manuscript and it might be good think how the longer quotes (i.e.. 40words plus) are presented.

The quotes in 531 and 532 look like the format may be incorrect in terms of whether these are standalone quotes. Are you able to write in brackets whether participants are male or female or give ages? E.g., "It's lit" (Male, 38 years old).

Reply 4: Formatting is intended to be in line with APA 7th edition format, thus longer quotations (40+ words) are presented in block format. Unfortunately, given de-

identification procedures and previous IRB guidelines (obscuring identifying information, etc.), we are unable to provide additional information about participants as it relates to direct quotations.

Changes in Text: N/A

Comment 5: Can you unpack what lit means to readers, is it more than cultural pride? This part could be more carefully written.

Reply 5: "Lit" is a culturally-specific term and it used to highlight the protective factors associated with racial identity beliefs and belongingness to one's racial group, as outlined on pages 21-22. The meaning of "lit" is further exemplified in direct quotations from participants which are included in the manuscript.

Changes in Text: N/A

Comment 6: Theme 3- Drink tea and pray

This theme could be stronger- can you make it clearer how this theme answers your research question and add more quotes to provide evidence of this theme? I think the theme is about stigma and barriers to accessing MH support but then I find it hard to link this with the theme title: 'Drink tea and pray.' Can you explain the theme title or rewrite it to reflect the paragraph? I see you explain the drink tea and pray at line 599- I wonder if these needs to be at the beginning of the paragraph?

Reply 6: We have included additional information that ties into the theme at the beginning of this section.

Changes in Text: In terms of how race-related factors negatively impact mental health treatment seeking attitudes, focus groups discussed a variety of culturally specific barriers to utilizing mental health services (e.g., stigma, lack of social support, exclusive reliance upon non-medical and/or religious solutions, etc.). Page 23.

Comment 7: Theme 5- I think the point of "the only black person I ever saw..." links to the issue of representation of Black people within MH services as well as presence of Black MH professionals. You also give a quote to this effect twice which is a little repetitive.

Reply 7: In response to the first part, participants noted that this was most reflective of Black mental health service providers, as they also noted that they received messages from peers about their personal experiences seeking mental health support (i.e., so it is less likely they were referring to overall lack of Black young adults seeking services/present in mental health services). We decided to retain both quotes as the first one applies to perceptions of mental health services broadly, and the second one applies to personal experiences related to seeking mental health services in their community, which provides important context related to how Black young adults perceive services

once they try to access them.

Changes in Text: N/A

Comment 8: I don't understand the equation of "nationalist ideology" with "(i.e., emphasizing the uniqueness of the Black experience) beliefs". Are you saying that the uniqueness of the Black experience is a type of nationalist ideology- which nations are you referring to? Can you unpack this please and perhaps speak to this in the discussion.

Reply 8: Theoretical frameworks have outlined the unique meaning of nationalist ideology and is referenced in the paper (Sellers et al., 1998), and more recent empirical studies have highlighted the relationship between nationalist ideology and emerging adulthood (Willis & Neblett, 2020). These papers are cited within the text as going more in-depth in this manuscript is outside the scope of this paper.

Changes in Text: N/A. Citations referenced above.

Comment 9: At the start of the discussion can you summarise all the major themes that you found?

Reply 9: Given the breadth of the thematic findings covered, a brief overview of major themes as it relates to the primary research question (i.e., developing culturally-adapted mHealth) is in the section "Next Steps for Culturally-Adapted mHealth for African American Young Adults" on page 36.

Changes in Text: N/A

Comment 10: A strength of this paper is that it provides high quality feedback on app features from the perspectives of Black users and barriers to usage that can be utilised by app researchers and developers- I think this is very strong and I would make this clear.

Reply 10: Thank you for this feedback. We have now explicitly stated this as a strength in the manuscript.

Changes in Text: Another strength of this study is that it provides feedback about the acceptability and usability of current mHealth apps for mental health from the perspective Black young adults. This can help researchers and developers tailor future mHealth interventions for this population. (Page 45).

Comment: 11 The small sample size is a major limitation for the quantitative aspect. You do not mention that there are gender differences in app usage and that there are only 9 males in your sample. The lack of male representation is also found in other studies of apps and it's important to mention this you can use the reference above or find another reference that describes lack of male participation in these studies as it is a source of bias.

Reply 11: These limitations are noted on page 47, at the beginning of the limitations section.

Changes in Text: N/A

Comment 12: You currently don't speak to the issue of drop off or attrition. Attrition is a major problem in app research. Did you get a sense from your study would help African American users to use apps over time? I would add this to future directions. I would also add a comment about the differences in cultural and ethnic backgrounds of different participants and that there may be some differences across particular cultures that are not identified in the current study.

Reply 12: Our findings relevant to increasing engagement among African American app users can be found on pages 38-39. The limitation of needing more heterogenous samples of African Americans in light of differences in cultural backgrounds is highlighted on page 44.

Changes in Text: N/A

Comment 13: Finally, I found the comments made about social media instructive but confusing. Please can you make this clearer and I think the interaction of apps with social media is also an important feature of this study that comes through that is often neglected by studies that examine app acceptability and barriers to effectiveness.

Reply 13: Thank you for this feedback. We have revised this section to highlight how community pages within mHealth apps may benefit from components/features common in social media.

Changes in Text: "One way this may be accomplished is by integrating features common to social media applications into mHealth community forums within future applications"(page 40).