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Recommendations for a culturally-responsive mindfulness-based intervention for African Americans☆

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ABSTRACT

Background: African Americans are at increased risk for stress-related disparities. Mindfulness-based interventions are effective in reducing adverse outcomes; yet, racial/ethnic minorities are underrepresented in these interventions. Also, the development of culturally-responsive interventions has been mostly non-existent.
Materials and methods: Focus group and interview data were acquired following a four-week mindfulness intervention with African American women.
Results: Using Brigg's (2011) mental health utilization model to guide analysis, several recommended culturally-responsive modifications emerged. Recommended modifications internal to the intervention included using African American facilitators, incorporating cultural values, using culturally-familiar terminology, and providing cultural resources. Suggested modifications to the intervention's external factors included offering the intervention within culturally-familiar settings. Individual-level factors to address were religious concerns, perceived benefits, and holistic health goals.
Conclusions: Themes were used to propose a model toward the creation of a culturally-responsive mindfulness-based interventions to guide culturally-relevant treatment modifications and improve underserved communities' engagement in these interventions.

1. Introduction

Stress has been identified as a significant predictor of poor health [34]; it can lead to cognitive appraisals that worsen stress-related illness as well as trigger biological processes (e.g., heart rate variability) that lead to chronic disease (e.g., cardiovascular disease) [14,25]. Compared to European Americans, African Americans are overwhelmingly burdened by stress-related outcomes; they are 30% more likely to die from heart disease [4], 50%–100% more likely to have diabetes [27], and they have shorter life expectancies [29]. These disparities are also apparent across psychological symptoms in that African Americans exhibit more severe and disabling depressive symptoms than other racial/ethnic groups [42].

Mindfulness-based interventions (MBIs) have been utilized to treat stress-related outcomes. Originating from Buddhist traditions, mindfulness promotes stress-regulation via meditative practices that foster nonjudgmental attention to thoughts, emotions, and physical sensations that arise in the present moment [19]. MBIs has promoted optimal health, protected against injurious health consequence, slowed disease progression, and reduced maladaptive coping [9,28,30]. These promising findings have also emerged across diverse samples, like African Americans [8,30,40]. For instance, mindfulness has been negatively associated with depressive symptoms and suicidal ideation in clinical samples of low-income African Americans [40]. MBIs specifically have reduced addiction severity among minority women [43], lowered anxiety among diverse women [1], and improved blood pressure among low-income African Americans [30]. The success of MBIs may be due to their impact on physiological mechanisms (i.e., inflammation) as well

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as their ability to decrease behaviors that contribute to illness [9]. Collectively these results indicate that MBIs effectively treat biological, psychological, and behavioral processes involved in stress-related disparities among African Americans.

Despite the growing allure of these interventions, MBIs have mainly included the experiences and social references of White culture [31]. Also, they have primarily heralded the universality of human suffering with limited attention to unique race-related sequela that contribute to harmful health among people of color [31]. Given this, culturally-relevant adaptations have been largely non-existent, with few exceptions [13,17,33,38]. To date, most modifications to MBIs target treatment concerns (e.g., substance abuse) rather than cultural values and sociocultural realities of diverse communities [13]. This is concerning given that qualitative findings elucidated barriers to engaging in non-adapted MBIs for African Americans, such as beliefs that these practices were incongruent with cultural coping (e.g., prayer) and led to stigma and caretaking conflicts [41]. Similarly, Woods-Giscombé and Gaylord (2014) [45] found that African Americans with previous mindfulness experience reported that culturally-relevant adaptions were needed to increase African Americans' participation.

Culturally-responsive MBIs are vital for several reasons. First, Lau (2006) [24] argued that cultural adaptations were necessary when theoretical or empirical research supported unique risk and protective factors underlying a treatment's model. A unique risk factor that impacts African American's health outcomes is race-based stress [12]. Race-related stressors directly influence health, and they contribute to unhealthy behaviors that compound risk for injurious outcomes among this group [35]. Yet, current MBIs do not explicitly target distinct cultural factors that contribute to and maintain illness for African Americans.

Second, cultural adaptions may address obstacles that hinder African Americans from reaping the full benefits of these interventions [6]. Currently, only 16% of African Americans use psychological services to treat mood disorder symptoms, and they are 20% less likely to receive depression treatment compared to European Americans [7]. When they do seek treatment, African Americans are more likely to terminate prematurely [20,36]. According to Briggs' (2014) mental health utilization logic model, African Americans' health disparities are due, in part, to their underutilization of health interventions; thus, reducing disparities is irrevocably linked to increasing engagement in interventions. Based on this model, three primary factors contribute to underutilization of services: factors internal to the mental health system (e.g., lack of culturally-relevant services); factors external to the mental health system (e.g., limited financial resources for services); and individual level factors (e.g., cultural mistrust). Thus, to meaningfully address African Americans' underutilization in services and to engage them in behavioral health interventions, modifications across these three dimensions are needed.

The current study used data collected from a four-week MBI with African American women to recommend modifications to enhance the cultural responsiveness of MBIs. After the intervention, women participated in a focus group and individual interviews. Guided by Brigg's (2011) logic model, the aims of the current study were to: (a) Assess the internal factors of MBIs that could be modified to increase engagement among African Americans; (b) Evaluate the external factors of MBIs that could be modified to increase participation among African Americans; and (c) Ascertain if adaptations could be made to reduce individual level barriers to MBI engagement among African Americans. Our hypotheses with regard to qualitative themes were exploratory. Recommended modifications were also used to propose a model that could inform the development of culturally-responsive MBIs for African Americans.

Table 1
Demographic characteristics (N = 7).

Characteristics	Participants *N = 7*
Education	
General Education Development (GED)/High School Equivalent	1
Completed High school	1
Some College/Did not graduate	2
Bachelor's Degree	2
Master's Degree/Terminal Professional Degree (PhD)	1
Income (i.e., "Personal Earnings after Taxes)	
$501-$1000/month	2
$1501-$2000/month	3
$4001-$4500/month	2
Marital Status	
Single/Never Married	3
Married	2
Widowed	1
Missing	1
Number of Children	
1	2
2	1
3	2
4	1
6	1

2. Materials and Methods

2.1. Participants

The university Institutional Review Board approved the current study. Once approved, we used purposeful sampling to recruit African American women from health-related events in Madison, Wisconsin who varied across age, education, relational status, and socioeconomic background. Flyers requested participation in a four-week self-care and stress-management intervention. Thirty-two women expressed interest in participating, eight of whom enrolled in the intervention. Of the eight women enrolled, seven women completed the intervention, and they ranged from 38 to 65 years old ($M = 52.14$, $SD = 9.28$). Demographics are presented in Table 1.

2.2. Intervention

The orientation, intervention sessions, and focus group were held at a local community-university partnership center. Prior to the intervention, women attended a 90-min orientation, which aimed to promote a sense of connection and community among participants and to address questions about mindfulness. The facilitator also reviewed the research study requirements.

The intervention was based on Kabat-Zinn's (2003) mindfulness-based stress reduction (MBSR) program. The first and second authors in collaboration with two certified mindfulness practitioners worked to condense the eight-week MBSR curriculum into four weeks. The intervention reviewed nonjudgment, beginner's mind, trust, non-striving, acceptance, and letting go, and practices included the raisin exercise, body scan, sitting and standing meditations, and loving-kindness. Weekly session lasted approximately 2.5 h, with the first 30 min designated for food and fellowship. Each week began with a brief review of the previous week's content and a discussion of homework logs. Women were given homework logs and a CD that included standard guided meditations to support at-home practice between sessions. Consistent with MBSR, women were encouraged to practice 45 min per day; however, they were informed that any practice was beneficial and that participation in the intervention was not contingent on completion of at-home practice.

No cultural adaptations were implemented; however, the intervention was facilitated by an African American woman (first author) who, at the time of the intervention, was an advanced clinical psychology

graduate student with mindfulness facilitation experience at a university-based clinic. Data were also collected by an African American woman (second author) who at the time of the study was a postdoctoral fellow in complementary and integrative health.

2.3. Data collection

Participants completed written consent forms prior to engaging in the focus group and individual interviews. Women who completed the research procedures received $100 at the end of the intervention.

Focus groups. All women participated in the focus group, which was guided by an in-depth, semi-structured protocol. Questions included (a) How do you see any of the practices (e.g., breath practice) helping some aspect of your life (e.g., family life)?; (b) Think about our (i.e., African American)? families and communities, is there anything about the 4-week intervention that wouldn't work or "fit" with us?; and (c) If you were in charge of running this mindfulness training specifically for African Americans, how might you change it?

Interviews. After the focus group, three women voluntarily participated in a follow-up individual interview. Like the focus group, interviews were guided by a detailed, semi-structured protocol that probed into participants' experiences with the 4-week intervention. Questions included: (a) Do you have suggestions for how we might make the meditation experience more inviting?; (b) Can you imagine a scenario where you might not want others to know that you meditate?; (c) When you think about someone who meditates, what kinds of traits or characteristics come to mind?; and (d) Is there anything else about mindfulness or meditation and African Americans that we didn't ask about, but you find important for us to know?

2.4. Data analyses

Focus group and interviews were audiotaped and transcribed. The team met weekly to systematically review transcripts and generate initial and refined themes [16,37]. Transcripts were reviewed with the three research questions in mind: (a) What internal factors can be modified to increase African Americans' engagement in MBIs?; (b) What changes are needed to the external factors to increase participation among African Americans?; and (c) What adaptations can reduce individual level barriers to improve engagement among African Americans? Themes are summarized alongside the proposed model in Fig. 1.

3. Results

3.1. Factors internal to the intervention

Internal factors are elements inherent to the intervention that characterize its theoretical assumptions, content, and delivery [6]. Participants endorsed four modifications to internal factors that could aid development of culturally-responsive MBIs: (a) include African American facilitators, (b) incorporate salient cultural values, (c), use culturally-familiar terminology, and (d) provide culturally-tailored resources.

Include African American facilitators. Participants strongly endorsed the need for African American facilitators. This sentiment was revealed by Daphne, who simply stated, "Having somebody that looks like us is important in anything." According to participants, racially similar facilitators were essential in promoting comfort, validation, and a sense of belonging. Also, many women expressed the desire for a space with an African American facilitator to foster feelings of safety and to offset the stress associated with spending time in predominantly white contexts (e.g., work). Additionally, women mentioned that the presence of African American facilitators would assuage African Americans' cultural mistrust and apprehensions about engaging in health-related services. Paula highlighted this point in discussing the parallel experience of having an African American physician:

> You don't want to go to the doctor. (…) But then again, when you can relate to a physician that understands us – I want to go to the doctor. We have this new African American physician … She's going to be able to relate to me versus the typical white male, so we need to be able to connect with people that look like us, people that understand.

Therefore, African American facilitators not only serve as trusted gatekeepers for culturally-responsive interventions, but also they provide much needed competencies (e.g., cultural understanding) not offered by non-African American facilitators.

Incorporate salient cultural values. All women agreed that successfully engaging African Americans in MBIs depended on curriculum content that reflected salient cultural values. Women highlighted that including these values would display African Americans' role in the creation and development of the intervention, and it would further evidence that African Americans were the intended beneficiaries of the treatment. Marilyn shared:

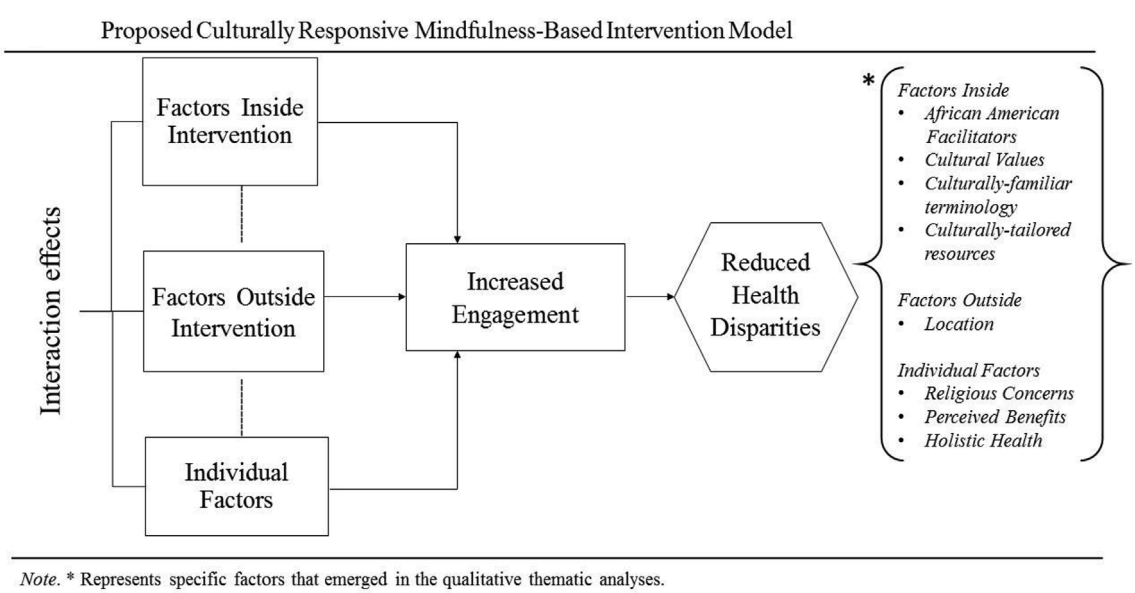

Fig. 1. Proposed culturally responsive mindfulness-based intervention model.

> If it's just going to be something else that is a spillover to our community that's coming from other communities, then we're going to have a hard time embracing that because we're not all going to see where our ownership lies with it.

Thus, to motivate African Americans to engage in interventions there must be clear messaging that its development was "for us by us." To this end, data revealed three cultural values to include in culturally-based interventions: self-empowerment, interdependence, and story-telling.

Self-empowerment. Given that feelings of powerlessness and helplessness can emerge in the face of pervasive racial inequity, women acknowledged the important role of inner strength and the sense of control over one's life, worth, and health. Participants discussed the need to illuminate the ways in which practicing mindfulness fostered self-empowerment and strength. For instance, Keisha stated:

> Black people, African Americans, need to be strong. (…) This [mindfulness-based practices] is bringing them more back into focus to say, OK, the issue here is you can't run away. You need to deal with this. You need to be aware that this is here so that you can address it.

Thus, participants suggested that these techniques be marketed as ways to promote awareness and self-regulation, which could ultimately bolster self-efficacy and self-empowerment to confront stressors and support optimal health.

Interdependence. Interdependence – the cooperative and mutual reliance between two or more persons or groups – has been recognized as a key value among African Americans. Women supported this by sharing that many African Americans neglect health-related activities because they are often overextended in navigating multiple challenges, like racism and caregiving obligations. According to participants, some African Americans may view taking time to utilize these skills as foregoing other responsibilities, which could negatively impact their families and communities. Thus, a motivating aspect of the intervention can be demonstrating how self-care aids caring for others. For instance, Marilyn reported:

> In our community, women have to wear so many hats. You're a mother, you're a father. You can have a husband and you're still the father. You're still the mother. You're everything to that family. So one of the things that I enjoyed most about participating in this was this whole idea of bringing an awareness of self and how important my own personal well-being is because I can't play those roles if I don't take care of me.

Keisha further expanded on this theme by discussing how her participation not only served personal health-related goals, but also it equipped her to be a health ambassador and advocate for important people in her life. She stated:

> I needed to get back on track for myself. But then I had also mentioned that I wanted to make sure I learned it the correct way so I could help my mom figure out how to de-stress and not scream every time somebody was on the phone with her. And then to help guide my son, to try to make good choices as he goes forward into adulthood and to consider using that as a way to deal with, like, constantly hearing about the unarmed individuals being shot.

Therefore, facilitators are encouraged to highlight how these skills can be shared across generational lines to meet an array of needs, like caregiver strain, role transitions, and race-based trauma. As a result, these skills can be crucial in enriching personal functioning and preserving the communal and interdependent nature of African American family life.

Story-telling. African Americans' rich history of story-telling has been passed down generationally to preserve communal and familial legacies and to teach important life lessons. Women mentioned that incorporating story-telling and testimony, especially from past participants, can validate and authenticate the challenges and rewards of undergoing the intervention, further motivating new participants to engage in treatment. In addition, women reported that encouraging participants to share their stories during the intervention can serve as a means of collective intention setting – the act of bringing people together around shared aims and attitudes – regarding the purpose of their participation. For instance, Lucille shared:

> There should be a sharing of a story, too, because everyone—every person, every individual—in order for them to have a commitment, should have been brought here because of a story. Something got you in the door. I think sharing that with the rest of the members in the group also adds and heightens the fact that people are here because they have serious things that they want to address by using this. It's not for the sake of just doing something to be doing it.

Thus, including story-telling can foster community and accountability, strengthening the communication and connection among group members.

Use culturally-familiar terminology. Women resoundingly suggested that practitioners avoid using the term 'meditation' to describe the practices. According to them, meditation engendered the connotation of being controlled by sources outside of themselves. Because these practices were not familiar religious practices (e.g., Christian prayer), women feared that meditation could open them up to unfamiliar and malevolent spiritual forces, ultimately causing discomfort and disinterest during practices. Keisha exemplified this when stating:

> That word "meditation" is not the appropriate word for us. It [has] a stigma of taking control, of being controlled by it. I think the problem here is that when we think of that word culturally for us meditation is like an out-of-body, out-of-mind type experience.

To address this concern, women suggested other terms be used in place of meditation, such as "awareness," "relaxation," and "mindful."

Provide culturally-tailored resources. In keeping with MBIs, women received a CD with guided meditations to facilitate at-home practice. Women appreciated the CD and the opportunity to practice the skills weekly; yet, women emphatically discussed negative reactions to the voice used for guided meditations. According to Maudie:

> The voice on the CDs need to be something that people can relate to (…) after the very first session when I went home with the CD I would have felt better if I had heard somebody's voice culturally, the tone was like mine (…) We go to work and we're in environments to where you're listening to the white voice and there are these commands. And what you're trying to get us to do with the meditation is to more or less embrace it and have it sort of like be our own and own it.

According to participants, being guided by a voice perceived as non-African American elicited feelings of subjugation, which undermined the invitational nature of mindfulness practices. This theme signifies the importance of understanding our clients and research participants in context; for African Americans being told what to do (e.g., "attend to your breath") by a "white voice" can implicitly conjure up past and present experiences of racial trauma – trauma associated with the presumed superiority and authority of European Americans over African Americans. Subsequently, women reflected on the distress that emerged in thinking about the consequences of not obeying the voice or the subtle urge to reject the voice's commands as a form of resistance against racial oppression. Overall, women's complex cognitive and emotional responses to the guided meditations exhibited the unintended consequences of offering non culturally-diverse supplementary resources.

3.2. Factors external to the intervention

External factors refer to features outside of and separate from the intervention that impact individuals' engagement in the service [6]. Participants suggested one modification to address the external factors that impede African Americans' engagement in MBIs interventions, and this was to provide the intervention at locations sanctioned within African American communities.

Utilize community-sanctioned locations. Participants identified one noteworthy external factor – the location of the intervention. Participants discussed the importance of offering services at locations accessible via public transportation, and most notably illuminated the advantages associated with housing the interventions within settings, like churches, endorsed by African American communities. According to participants, offering services in culturally familiar spaces can enhance African Americans' willingness to accept the intervention, which will lead to increased engagement among this group. Keisha mentioned, "If the church embraces it it'll have a domino effect as far as how other members within the community embrace it and accept it." Thus, providing the intervention at a church sends the message that the intervention has received the seal of approval by trusted community gatekeepers. This in turn tacitly communicates that the intervention is welcomed and trustworthy, which is vital in assuaging individuals' concerns and trepidations about engaging in unfamiliar health-related services.

3.3. Individual factors

Individual-level factors denote individuals' attitudes, beliefs, and experiences that contribute to their willingness to engage in services [6]. Participants suggested three modifications to address individual factors to facilitate African Americans' increased participation in culturally-responsive MBIs: address religious concerns, accentuate benefits, and underscore holistic health.

Address religious concerns. Women mentioned that people may not engage in these interventions due to beliefs that these approaches oppose traditional religious practices, mainly Christian practices. For instance, one participant, Deanna, described sharing her intervention experience with a church member, in which the member replied "Meditation? Isn't that the stuff that the Buddhist people do?" According to Deanna, and other participants, individuals may decline participating in MBIs for fear of going against their religious affiliation. In addition, women may be concerned that utilizing these strategies will cause others to perceive them as embracing alternative religions. This was supported by Lucille, who reported, "There may be a correlation with people misperceiving that you're practicing something that's a part from another religion that you're not a member of and that is going against supposedly your faith." Participants noted that these beliefs may be attributed to misperceptions about meditation, with one of the most common misperceptions being that it involves seeking guidance from sources other than one's designated higher power. For instance, Paula stated:

> African Americans are tied to the religious structure of the community. I would be willing to bet you [there are] a lot of taboos against meditation simply because folks are ignorant to what it is and they feel that it's something that would take precedence over being spiritual and getting spiritual guidance to relieve yourself of the stress.

To address this, women suggested that sessions address misperceptions about meditation by stating how these practices represent health-specific behavioral strategies divorced from any particular religious orientation. Women also recommended that facilitators clarify that these practices can be used alongside one's existing religious practices to reduce stress.

Accentuate benefits. According to participants, individuals may not engage in MBIs because they do not perceive benefits. In a world of competing demands, participants noted that individuals will be unlikely to designate time for interventions with no apparent personal benefits. For instance, Marilyn stated, "Everybody's time is valuable, so it takes a lot to give up your Saturday. [People want to know] what's in it for me? I initially found this appealing because of the fact that I was stressed out." To remedy this, participants recommended thoroughly marketing the benefits upfront, which can involve providing introductory materials and workshops that highlight the goals of mindfulness, its overall benefits, and its specific benefits related to stress reduction.

Underscore holistic health. Women discussed the stigma related to psychological help-seeking and its impact on individuals' willingness to engage in MBIs. They shared that some people may avoid MBIs to protect against being perceived as having significant emotional concerns or being unable to handle stress. Yet, women shared that these same stigma concerns do not apply to physical health; therefore, if these approaches were promoted as means to treat health issues, like diabetes and heart disease, and as strategies akin to exercise, people would be less hesitant to participate. Katrina mentioned:

> Black people who are having health issues (…) they've been directed to focus on changing diet, being more active, and get into some exercise, and even maybe being directed to try to figure out a way to relieve stress (…) people with anxiety disorders, diabetics, people with heart failure … (…) but they can't give them a pill to do that. They can't direct them as to how to do it, but they just suggest that they do it. And so to know that this [mindfulness] could be something that could help them.

Therefore, women felt that focusing on holistic health could expand the reach of MBIs to include myriad health concerns, ultimately attracting more participants.

4. Discussion

Qualitative data obtained from a four-week mindfulness-based intervention with African American women were used to propose a model toward the development of culturally-responsive MBIs. Informed by Brigg's (2011) mental health utilization logic model, modifications across three dimensions were proposed. Recommended modifications to the intervention's internal factors were identified, like using African American facilitators, reflecting cultural values within content, using culturally-familiar terminology, and providing culturally-tailored resources. Moreover, women recommended changes to the external factors, like offering the intervention within settings (e.g., churches) approved by African American communities. Lastly, women suggested addressing individual-level barriers by targeting religious concerns, accentuating benefits, and focusing on holistic health. These findings support the need for culturally-responsive treatment alterations to improve engagement among African Americans in MBIs.

With regard to the internal factors, women overwhelmingly endorsed the need for African American facilitators. This is consistent with meta-analytic findings that individuals endorse a moderately strong preference for racially similar therapists [10]. Unfortunately, despite better efforts in psychology graduate programs to recruit and retain diverse trainees, there remains a visible dearth of culturally diverse clinicians [26]. One strategy in keeping with cultural competency efforts to reduce racial/ethnic health disparities is the use of community health workers – community members who serve as liaisons to health education and health services [5]. Community members are especially equipped to foster cultural linkages between systems of care and underserved communities and to provide cost-effective health services. Therefore, providing mindfulness training to community members can facilitate increased dissemination of these skills to at-risk individuals least likely to access these services.

Women also suggested that the curriculum reflect cultural values and culturally-familiar terminology as well as come with culturally-

relevant supplementary aids. This modification is consistent with Sue's (1977) culturally-adapted treatment recommendations, and it overlaps with literature that shows that diverse clients are more likely to seek out and engage in behavioral health interventions that reflect their values and beliefs [3,23]. Moreover, although women suggested that self-empowerment, interdependence, and story-telling be included in culturally-tailored interventions, recent findings exhibit that certain mindfulness aspects correspond to African Americans' racial socialization messages [44]; thus, it may be beneficial to illuminate the connection between mindfulness and racial socialization in these interventions.

Pertaining to external factors, women recommended that interventions be provided in culturally familiar spaces, like churches, to increase engagement among African Americans. This is not surprising given that religion and spirituality are fundamental aspects of African American culture [18] and that African Americans have been found to view the church, compared to the mental health service system, as a better venue for mental health care [32]. In keeping with other partnerships between clinicians and pastors, mindfulness practitioners can collaborate with churches, including promoting interventions through weekly sermons, encouraging client referrals via pastoral counseling, and offering brief workshops at church activities [32]. Such efforts can be empirically investigated to assess if they increase intervention utilization among this population.

Relatedly, women noted that religious concerns were an individual-level barrier to African Americans' participation in MBIs. Findings show that 79% of African Americans identify as Christian, and compared to European and Latinx Americans, they are more likely to attend religious services at least once a week and to pray regularly (Pew Research Center, 2018). These concerns may be addressed by providing spiritually-tailored services. Findings from an online Christian-sensitive contemplative intervention revealed that individuals in the religiously-tailored group demonstrated decreased stress over and above the control group, suggesting that psychological symptoms can be ameliorated through the integration of meaningful religious practices and empirically-supported behavioral strategies [22].

Participants also reported that limited knowledge about the intervention's benefits is a major individual-level barrier. Perceived benefits have emerged as one of the strongest predictors of health-behavior [11]. As a result, increasing participation among this group may depend on emphasizing positive outcomes, especially holistic health benefits. Tailored messaging about these benefits, along with their connection to cultural values, may improve this group's rates of intervention engagement [21].

4.1. Limitations

The current study's sample only included women currently living in a Midwestern college town; thus, findings cannot be generalized to reflect the experiences of African American men or women from other regions. Although generalizability is not a required criterion for qualitative research [16,37], limited generalizability can impact the feasibility and applicability of this proposed model to diverse African Americans. Additional research is needed to assess the relevance of this model among African Americans who vary across regional status, socioeconomic background, age, gender identity, and sexual orientation. Also, women who completed the intervention may differ from women who did not self-select to participate. Further, the intervention was provided for free, included compensation, and offered minor incentives (e.g., weekly giveaways). This contrasted the average MBSR class, which costs $400 to $500. Therefore, it is unclear if additional modifications are needed to ensure sustained engagement among individuals paying for the intervention.

4.2. Future research directions

Empirically supported interventions have become the gold standard in behavioral healthcare [2]. Therefore, it is of paramount importance to rigorously evaluate both the efficacy and effectiveness of culturally-responsive MBIs for diverse populations. This aim is also in keeping with the need to increase racial/ethnic minority individuals' representation in randomized controlled trials of MBIs [39]. Although meta-analytic findings support a moderate positive effect of culturally tailored health interventions [15], future studies can investigate which components of culturally-responsive MBIs are most essential in enhancing quality of life among diverse groups. These studies can also assess which elements are most vital in ensuring the fruitful recruitment and retention of African Americans in such interventions, with special attention to the subgroups of African Americans that are most and least likely to participate.

5. Conclusion

In sum, findings from the current study and its subsequent model can guide culturally-responsive treatment adjustments, improve engagement among African Americans in MBIs, and ultimately aim to reduce stress-related disparities among this group. This study adds to the burgeoning literature on the acceptability and feasibility of MBIs among racial/ethnic minorities, and it highlights the need for continued research on multicultural adaptations of MBIs. Such research efforts are vital to mitigate the multilevel and multifaceted barriers that thwart underserved communities' engagement in these interventions and to eliminate their disparate stress-related outcomes.

Conflicts of interest

Dr. Angela R. Black has received research grants from the University of Wisconsin Complementary and Alternative Medicine Research Fellowship, funded by National Center for Complementary and Integrative Health (T32AT006956). She also received support from the Clinical and Translational Science Award (CTSA) program, through the NIH National Center for Advancing Translational Sciences, grant UL1TR000427. Dr. Angela R. Black, Dr. Natalie N. Watson-Singleton, and Ms. Briana N. Spivey declare that they have no conflict of interest.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ctcp.2018.11.013.

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