


Acceptability and Use of Mind-Body Interventions Among African American Cancer Survivors: An Integrative Review

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Abstract

Mind-body interventions have been shown to improve physical and mental health outcomes among cancer survivors, and African Americans have one of the highest cancer mortality rates of all racial/ethnic groups, while often facing considerable barriers to quality healthcare. African American cancer survivors report difficulty accessing mind-body practices, and few studies have focused exclusively on African American populations. This integrative review aims to explore the acceptability and use of mind-body interventions among African American cancer survivors. This review seeks to determine if current research indicates that mind-body interventions may be helpful in improving outcomes for African American cancer survivors. The literature search resulted in 284 studies, of which 14 met the inclusion criteria. Inclusion criteria were articles published in or after 2016, written in the English language, addressing mind-body modalities, and including a study population of $\geq 50\%$ African American cancer survivors. Other reviews, meta-analyses, or studies without results were excluded. Results indicate that African American cancer survivors have expressed receptiveness to interventions incorporating mindfulness, meditation, yoga, Tai Chi, and other mind-body or complimentary/alternative medicine interventions. Still, few studies have offered such interventions exclusively to African American cancer survivors. This review indicated that African American cancer survivors across demographic backgrounds are interested in and view mind-body practices as an acceptable way to improve quality of life, pain interference, fatigue, anxiety, depression, and physical health; however, the interventions should be culturally appropriate and accessible. In conclusion, despite a growing interest in mind-body interventions, African American communities are often unaware of opportunities to engage in these practices in their communities, and mind-body practices are inaccessible due to cost or geographical location. Additional research that offers such interventions specific to African American cancer survivors is warranted.

Keywords

CAM, African American, cancer survivors, mind-body, health disparities

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Introduction and Background

Though health disparities have narrowed in recent years, African American cancer survivors (AACS) continue to have higher cancer mortality rates than other racial and ethnic groups.¹ They also report reductions in quality of life (QOL), depression, anxiety, lack of social support, pain, weight gain due to treatment, and poor access to resources.^{2,3} Mind-body exercise and complementary and alternative medicine (CAM) interventions such as meditation, yoga, mindfulness, massage therapy, acupuncture, Tai Chi, and Qigong can improve cancer patients' mental health, sleep quality, physical fitness, pain management, and lifespan.^{4,5} Despite documented positive effects, AACS remain an underserved population in mind-body research, and these

interventions are rarely offered to AACS. Descriptive studies have demonstrated that as a group, AACS have interest in mind-body modalities, but these practices often are inaccessible to African American communities because of cost, geographical location, low socioeconomic status, and lack of knowledge or awareness.⁶⁻¹¹

Though there have been few mind-body interventions offered for AACS, African Americans report using mind-body medicine on their own to improve quality of life or

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reduce stress. Practices that focus on meditation, relaxation, and spirituality are the common forms of mind-body medicine used by African Americans, especially women.^{9,12,13} A nationwide survey of women with a family history of breast cancer found that African American women were more likely to use CAM practices with meditation or spiritual components, comprising 45.9% of users.¹³ Another survey found that AACS are more likely than white cancer survivors to use relaxation techniques, and interest and self-guided use of CAM is high across cancer survivors of various minority backgrounds.⁹ Mind-body interventions that focus on stress reduction or psychotherapy may be helpful for female African Americans, who face additional stressors associated with cultural or gendered expectations.¹² Research indicates that African Americans find mindfulness practices to be compatible with and even enhance their spiritual practice,¹⁰ and those who report poor physical health and health-conscious behavior also have higher mind-body practice usage, indicating that African Americans may perceive mind-body practice as a valuable tool to work toward a healthier lifestyle.¹⁴

This review seeks to (1) aggregate the findings of the CAM interventions offered for AACS published from 2016 to 2021 and (2) evaluate the available research on the acceptability and interest in CAM interventions among AACS. Various nomenclature including African American, Black, and Black Americans were used throughout the studies included in this review and are used interchangeably for the purpose of this paper.

Methods

Literature Search

The objective of this review was to determine if AACS report interest in or use of mind-body modalities, and to assess the current state of research on many mind-body interventions for AACS. PubMed Advanced Search, Ovid Nursing, and Medline databases were the primary resources for electronic literature searches and included literature that was published between January 2016 and December 2021. Search terms for included various combinations of the following key terms: “*African American OR Black American OR Blacks OR multiethnic*,” “*mind-body OR yoga OR tai chi OR qigong OR mindfulness OR meditation OR MBSR*”, “*cancer OR cancer patient OR cancer survivor*.” Clinical trials that met these criteria are listed in Table 1, while focus groups or descriptive studies that met these criteria are listed in Table 2.

Inclusion and Exclusion Criteria

These searches generated 284 articles, of which 14 met the inclusion criteria. Inclusion criteria were (1) published from 2016 through 2021, (2) written in the English language, (3)

study population was $\geq 50\%$ African American, (4) study population was comprised of adult cancer survivors (of any type of cancer), (5) clinical trials included must offer a CAM intervention, (6) qualitative studies must include a component to assess African American cancer survivors’ perceptions of CAM. Figure 1 includes a summary of records identified, screened, and included. Other literature reviews or meta-analyses were excluded, but examined for additional references. No reviews or meta-analyses were found that addressed the acceptability and use of mind-body interventions among African American cancer survivor populations. Table 1 includes a complete sample ($n=8$) of all mind-body interventions previously offered to exclusively or majority ($\geq 50\%$) AACS populations. Five of these interventions had included only AACS; while 3 studies¹⁵⁻¹⁷ included cancer survivors of various racial backgrounds, with most participants identified as African American (63%, 65%, and 55% identified African American, respectively). Table 2 documents cross-sectional or qualitative studies ($n=6$; 4 focus groups, 1 descriptive study, 1 cross-sectional survey-based study) that have examined the acceptability or use of CAM among AACS. Four of these descriptive studies included only AACS; 1 study included cancer survivors of various racial backgrounds (64%) identified as African American,¹⁸ and one study included cancer survivors who were uninsured and of a minority background, with 98% identifying as African American.¹⁷

Review Process

Two reviewers (EW, PS) screened all titles and abstracts of the identified studies independently to see if they met the inclusion criteria. If the abstract did not provide comprehensive information on whether the study met inclusion criteria, the reviewers screened the full text of the article. One reviewer (EW) organized data into a table that included information on authors, year, country, study title, study design and population, intervention/outcome, and key findings. Another reviewer (PS) cross-checked this table for completeness and accuracy of extraction. This process was repeated twice: once in Table 1 and then again for Table 2.

Results

Study Designs and Populations

Eight interventions for AACS populations were included (see Table 1). Four of these interventions were randomized controlled trials (RCT); other study designs included single-arm trials ($n=3$) and parallel assignment. All 5 interventions with an exclusively African American study sample were specific to breast cancer survivors.^{16,19-23} Galantino et al’s intervention with a multiethnic sample of cancer survivors (63% African American) limited their

Table 1. CAM Interventions for AACS.

Author	Study title	Study design	Population	Intervention	Key findings
Thompson et al ¹⁹	Randomized controlled trial of a breast cancer Survivor Stories intervention for African American women	RCT	N = 228 non-metastatic African American breast cancer survivors	Intervention group received a tablet computer with survivor stories three times over the intervention period Control group received standard care	<ul style="list-style-type: none"> No effect on QOL, depressive symptoms, or concerns about recurrence Longer use of intervention was associated with increased concerns about recurrence and decline in QOL subscales: emotional well-being, energy/fatigue, and role limitations due to physical health, and increased fear of recurrence Emotional well-being total score improved in the intervention group ($P = .002$)
Ashing and George ²⁰	Exploring the efficacy of a paraprofessional delivered telephone psychoeducational intervention on emotional well-being in African American breast cancer survivors	RCT	N = 40 African American breast cancer survivors	Intervention group received seven (0-60 min) counseling phone calls from clinical research assistants Control group received survivorship booklet	<ul style="list-style-type: none"> CIPN symptoms improved significantly ($P = .039$) Improvement was also noted fear of falling ($P = .058$), stress ($P = .608$), sleep quality ($P = .644$).
Galantino et al ¹⁵	Effectiveness of somatic yoga and meditation: a pilot study in a multicultural cancer survivor population with chemotherapy-induced neuropathy	Single arm trial	N = 8 cancer survivors of various types of cancer with CIPN (63% African American)	Somatic yoga and meditation weekly for eight weeks.	<ul style="list-style-type: none"> Reduction in dyspnea in cancer survivors ($P = .075$) Most improvement seen in individuals with no prior mind-body exercise experience $\geq 80\%$ attendance at weekly classes
McDonnell et al ¹⁶	A prospective pilot study evaluating the feasibility and preliminary effects of <i>Breathe Easier</i> : a mindfulness-based intervention for survivors of lung cancer and their family members (dyads)	Parallel assignment	N = 26 lung cancer survivors (65% African American) and 23 family members	2-h sessions including Hatha yoga instruction and information on physical and mental health, offered weekly for eight weeks	

(continued)

Table 1. (continued)

Author	Study title	Study design	Population	Intervention	Key findings
Charlot et al ¹⁷	Feasibility and acceptability of mindfulness-based group visits for smoking cessation in low-socioeconomic status and minority smokers with cancer	Single-arm observational	N = 18 cancer survivors of various types of cancer (55% African American)	Eight mindfulness training group sessions including information on mental and physical health pertaining to smoking cessation	<ul style="list-style-type: none"> • Significant decrease in cigarette smoking ($P = .039$) • Two thirds of participants attended $\geq 50\%$ group sessions
Taylor et al ²²	A restorative yoga intervention for African-American breast cancer survivors: a pilot study	RCT	N = 33 African American breast cancer survivors	75-min yoga classes weekly for 8 weeks Wait list control group	<ul style="list-style-type: none"> • Intervention group depression scores improved from baseline to 8 weeks ($P < .01$) • 61% adherence rate to intervention • No significant differences in sleep quality, fatigue, or perceived stress • Both groups lost weight, but Interventionist guided group had greater weight loss ($P < .001$) when compared with self-guided control group
Stolley et al ²¹	Efficacy of a weight loss intervention for African American breast cancer survivors	RCT	N = 246 overweight/obese ($BMI \geq 25 \text{ kg/m}^2$) African American breast cancer survivors	Interventionist guided group using social cognitive theory (Moving Forward Weight Loss Intervention) Control group used self-guided weight loss program	<ul style="list-style-type: none"> • Interventionist guided group showed more improvement in physical activity ($P = .003$) • Improvement in Mindful Eating Questionnaire scores ($P = .001$) • Weight loss ($P = .015$)
Chung et al ²³	Weight loss with mindful eating in African American women following treatment for breast cancer: a longitudinal study	Longitudinal single arm trial	N = 22 African American breast cancer survivors ($BMI \geq 35 \text{ kg/m}^2$)	12-week mindful eating intervention (dietary counseling and group mindfulness sessions)	

Table 2. AACCS Perceptions of CAM.

Author	Study title	Study design	Population	Topic	Key findings
Bari et al ¹¹	Awareness, use and outlook of complementary and alternative medicine (CAM) options in an underserved, uninsured minority patient population	Cross-sectional survey-based	N = 100 uninsured cancer survivors of various types of cancer (98% African American)	Awareness and use of CAM	<ul style="list-style-type: none"> • 16% of participants reported CAM use • Meditation and yoga were the most frequently used mind-body modalities • 70% of participants want their healthcare team to provide more information about CAM
Beer et al ¹⁸	A focus group evaluation of Breathe Easier: a mindfulness-based mHealth app for survivors of lung cancer and their family members	Four focus groups	N = 11 lung cancer survivors (64% African American) and their family members (n = 8)	Feedback on a prototype of Breathe Easier, a MBI app	<ul style="list-style-type: none"> • 32% of participants noted the convenience of app usage to access MBSR • Participants reported satisfaction with stress-reduction techniques shown in app
Yan et al ²⁴	Culture, identity, strength and spirituality: a qualitative study to understand experiences of African American women breast cancer survivors and recommendations for intervention development	Eight focus groups	N = 40 African American breast cancer survivors	Recommendations for culturally acceptable interventions	<ul style="list-style-type: none"> • Need for community-based interventions that are acceptable to African American culture • Interventions should include a spiritual component
Smith et al ²⁵	Community engagement to address socio-ecological barriers to physical activity among African American breast cancer survivors	Four focus groups	N = 60 African American breast cancer survivors	Barriers to physical activity, strategies for exercise efficacy, exercise recommendations	<ul style="list-style-type: none"> • Interest in yoga for physical and psychological benefits • Other interests were walking and strength training • Support groups are important to address barriers to physical activity
Hamilton et al ²⁶	Using religious songs as in integrative and complimentary therapy for the management of psychological symptoms among African American cancer survivors	Qualitative descriptive study	N = 31 African American cancer survivors of various types of cancer over 50 years old	The effect of religious songs and prayer on participants' resilience during stressful life events	<ul style="list-style-type: none"> • 29% of participants used religious songs to cope with cancer-related stressors • Findings consistent with African American history of using religious songs to manage psychological stress
Haynes-Maslow et al ⁶	Cancer support needs for African American breast cancer survivors and caregivers	Five focus groups	N = 22 African American breast cancer survivors and their caregivers (n = 19)	Support needs for AACCS and their caregivers	<ul style="list-style-type: none"> • Need for culturally appropriate resources for AACCS and their caregivers • Need for exclusively AACCS support groups/resources • 59% expressed importance of social support (church, family, friends, other survivors, oncology team)

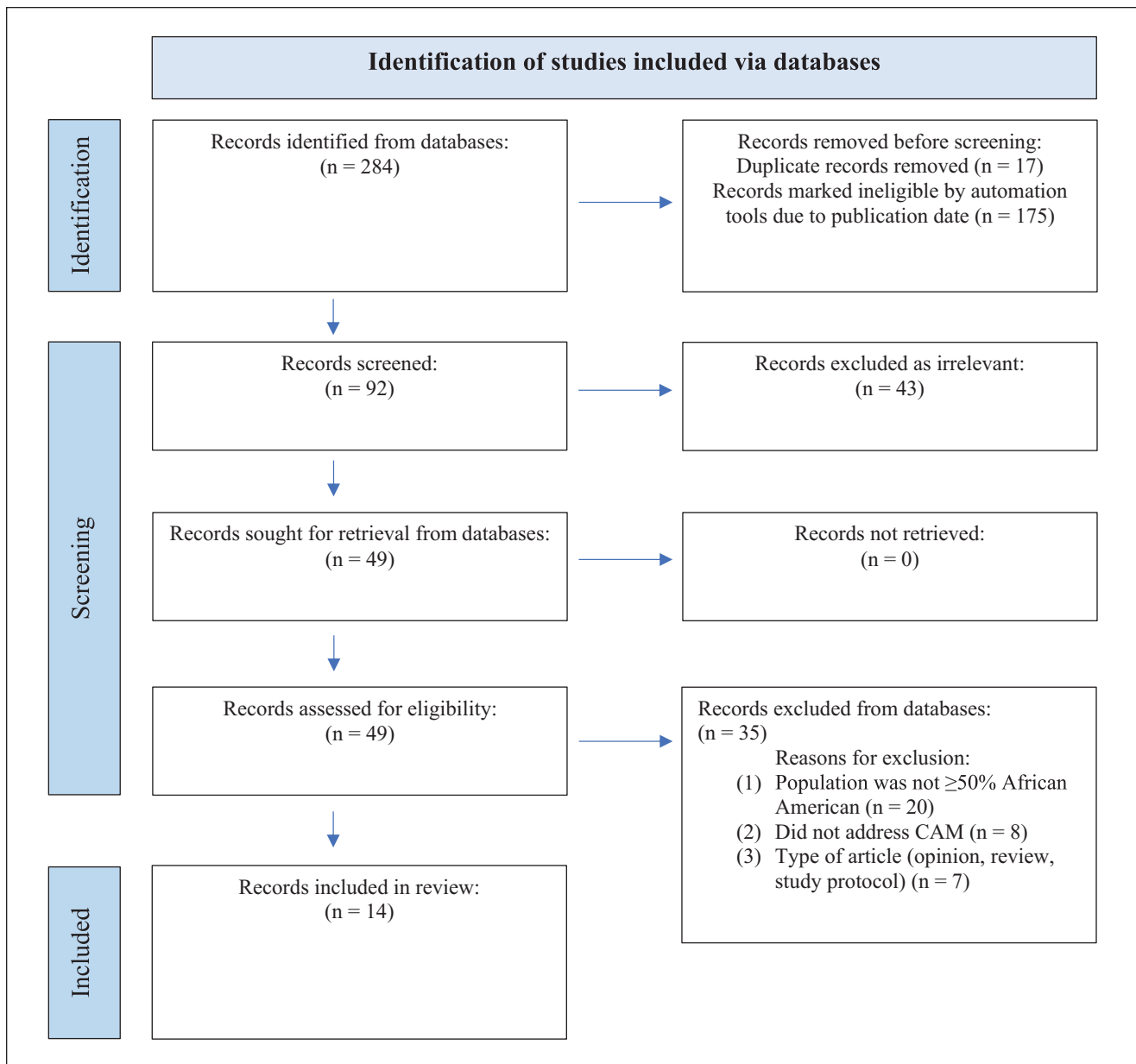


Figure 1. Identification of studies included via databases.

population to cancer survivors with chemotherapy-induced neuropathy; this study had the smallest sample size ($n=8$) of all interventions.¹⁵ McDonnell et al.'s intervention included a multiethnic sample (65% African American), which was limited to lung cancer survivors.¹⁶ Charlot et al.'s intervention included a multiethnic sample of survivors of various types of cancer who were also active cigarette smokers; this study's sample was 55% African American.¹⁷ We found no mind-body interventions for study populations where all participants identified as African American but were survivors of various types of cancer.

These study populations were consistent with the qualitative studies that examined CAM perceptions among AACS.

Of the 5 qualitative studies we included, the 3 studies with exclusively African American samples were focus groups, and these studies also limited their population to breast cancer survivors.^{8,24,25} The 3 focus groups addressed support needs, spirituality, intervention recommendations, and barriers to physical activity among African American breast cancer survivors; these met the inclusion criteria because the use of CAM emerged as a theme or recommendation for future interventions during the focus group. The other studies (1 focus group, 1 descriptive study, and 1 survey) included CAM as the primary topic. Beer et al.'s study conducted 4 focus groups with 11 lung cancer survivors (64% African American)¹⁸ and their family members. Hamilton

et al.'s qualitative descriptive study interviewed African Americans over age 50 who were survivors of any type of cancer.²⁶ Bari et al.'s cross-sectional survey-based study included a sample of 100 survivors of any type of cancer (the majority of participants had lung cancer) who identified as coming from an uninsured, minority background; 98% of this study sample identified as African American.¹¹

Psychological Interventions

There were several similarities across the 8 mind-body interventions offered to AACS. Five of the interventions were psychological or psychoeducational and aimed to improve emotional well-being in participants; in 4 of these interventions, participants were breast cancer survivors,^{19-21,23} 1 intervention had a multiethnic (55% African American) sample of cancer survivors of various types of cancer (primarily lung and breast cancer).¹⁷ In Thompson et al.'s randomized controlled trial using a "Survivor Stories" intervention, 108 newly diagnosed, non-metastatic breast cancer survivors received electronic devices 3 times over the 2-year intervention to view videos of other AACS addressing breast cancer survivorship.¹⁹ Ashing and George's randomized controlled trial with a psychoeducational intervention was also delivered remotely (via telephone) but used a cognitive-behavioral approach led by clinical research assistants instead of a survivor stories/peer-delivered approach.²⁰ Similar topics were covered in both interventions, such as breast cancer education, accessing resources, and managing stress, but the outcomes differed considerably. In the "Survivor Stories" trial, the intervention did not affect QOL, depression, or fear of recurrence; within the intervention group, more exposure to the videos was correlated with increased fear of recurrence and decreased QOL.¹⁹ In the psychoeducational intervention, the intervention group (n=20) improved significantly for overall emotional well-being²⁰ ($P=.002$) when compared to the control group.

Stolley et al.²¹ and Chung et al.'s²³ psychological interventions had aims of weight loss in addition to improvement in emotional well-being. Stolley et al.'s RCT used social cognitive theory in a community-based intervention²¹ for 246 AACS (breast cancer) with a BMI ≥ 25 kg/m²; Chung et al.'s single-arm trial²³ focused on mindful eating improvement through dietary counseling and group mindfulness sessions for 22 AACS (breast cancer) and BMI ≥ 35 kg/m². Both of these trials' intervention groups improved in weight loss: the RCT intervention group²¹ significantly improved compared to the control group ($P<.001$), and the single-arm trial²³ found significant weight loss ($P=.015$). Charlot et al.'s single arm observational trial offered 8 mindfulness training group sessions to promote smoking cessation among low-income individuals with cancer (n=18; 55% African American). This feasibility trial found satisfactory attendance to focus groups and significant decreases in cigarette smoking ($P=.039$).¹⁷

Yoga and Mindfulness Interventions

The other 3 trials included offered yoga interventions. While all psychological interventions were specific to breast cancer survivors, all yoga interventions were open to AACS of all types of cancer. Two yoga interventions^{15,16} addressed cancer-specific physical symptoms. Galantino et al.'s single-arm trial used somatic yoga and meditation weekly for 8 weeks to work on chemotherapy-induced neuropathy (CIPN) in a sample of cancer survivors (63% AA). Though this trial had a small sample size (n=8), there was a significant improvement ($P=.039$) in CIPN symptoms, along with a qualitative theme of social support.¹⁵ McDonnell et al.'s intervention offered Hatha yoga for a predominantly African American (65%) group of lung cancer survivors and their family members intending to reduce dyspnea. This intervention also occurred weekly for 8 weeks and found improvements ($P=.075$) in survivors' dyspnea reduction, as well as improvements in sleep quality.¹⁶ In Taylor et al.'s yoga intervention for AACS (breast cancer), 18 AACS received weekly yoga classes for 8 weeks.²² The intervention group showed improvements in depression scores ($P<.01$) post-intervention, while there was no difference between groups found for other measures (sleep quality, fatigue, perceived stress).²²

Qualitative Study Designs

Four of the qualitative studies followed a focus group design,^{8,18,24,25} one was a qualitative descriptive study,²⁶ and one was a cross-sectional survey-based study.¹¹ Yan et al.'s study conducted 8 focus groups with 40 AACS (breast cancer) using a social-cognitive model to ask participants about their experiences with breast cancer survivorship and recommend culturally sensitive interventions for future survivors.²⁴ Smith et al.'s²⁵ intervention focused on intervention recommendations through 4 focus groups of 60 AACS (breast cancer), and participants answered questions about barriers to socio-ecological physical activity. Haynes-Maslow et al.'s focus group⁸ addressed cancer support needs among a population of AACS (breast cancer) and their caregivers, making it 1 of 2 qualitative studies^{8,18} that incorporated caregivers. Beer et al.'s focus group also included both survivors and their families, with a population of 11 lung cancer survivors (64% African American).¹⁸ This focus group also addressed recommendations for a specific intervention: lung cancer survivors and their family members evaluated a mindfulness-based mHealth app based on convenience and perceived efficacy of stress-reduction techniques demonstrated in the app, which included body scans, mindful eating, and gentle movement.¹⁸ The descriptive study by Hamilton et al. with a population (n=31) of older (≥ 50 years old) AACS asked older AACS how religious songs and prayer throughout their lives affected their ability to cope with psychological stress.²⁶ Bari et al.'s¹¹ cross-sectional survey-based study assessed the awareness and

use of CAM among minority cancer patients (98% African American) who were uninsured.

Qualitative Study Themes

The themes that emerged most consistently across the qualitative studies we included were social support^{8,24,25} and spirituality.^{24,26} In Haynes-Maslow et al.'s support group, 59% of AACS and their caregivers expressed the need for social support through church, family, friends, peers, or their oncology team.⁸ After reviewing a mindfulness-based mHealth app prototype, AACS focus groups suggested adding a community support aspect to the app and advised that oncologists recommend it to new patients.¹⁸ AACS in Smith et al.'s focus groups found social support increased motivation for physical activity and helped individuals overcome barriers to healthy exercise habits; Yan et al.'s focus groups identified community-based interventions as more culturally acceptable.^{24,25} AACS in Smith et al.'s focus group participants suggested that yoga be included (along with walking and strength training) in interventions for AACS to promote physical activity.²⁴ When reviewing the mindfulness app, which included physical activity components, 32% of AACS felt that the convenience of the app improved access, while other participants mentioned that an app without in-person interactions or support might fail to provide sufficient motivation to keep up with mindfulness activities.¹⁸

AACS discussed that spirituality helped to develop resilience and was an important relaxation or stress management technique.^{24,26} Hamilton et al.'s focus group identified religious songs as a culturally appropriate way to build resiliency, and 29% of participants reported using songs to cope with the mental health effects (especially depression) of cancer-related stress.²⁶ Other themes identified included finding strength in African American identity and access to support services exclusively for AACS.^{8,24} In a survey assessing AACS' perceptions and use of CAM, Bari et al found that 16% of respondents reported using mind-body modalities, with the most commonly used being meditation (56%) and yoga (31%).¹¹

Discussion

Successful Components of Mind-Body Interventions

In both clinical trials and qualitative studies, AACS identified social support as a component of successful engagement in mind-body practice. The presence of social support may account for the difference in response between the Survivor Stories¹⁹ and psychoeducational phone-delivered²⁰ interventions for breast cancer survivors: both interventions offered remotely-delivered ways to learn about breast cancer survivorship, but in 1 intervention, survivors interacted

with the material more actively (via phone), compared to a more passive interaction (watching videos). Both interventions with aims of weight loss^{21,23} mentioned social support, consistent with the qualitative studies' recommendations of social support as a motivation for adherence to physical activity. The presence of social support also provided an educational component to exercise interventions by providing the opportunity for AACS to share and learn from their peers' experiences.^{15,25}

Yoga was the most common exercise intervention mentioned, and all 3 yoga interventions^{15,16,22} included weekly classes for 8 weeks. Taylor et al.'s and McDonnell et al.'s studies reported satisfactory participation rates of 61% adherence²² and $\geq 80\%$ class attendance,¹⁶ respectively. Together, these findings suggest that an 8-week timeframe is reasonable for AACS populations.

Strengths and Limitations of This Review

This is the first review to explore the use of mind-body interventions specifically for African American cancer survivor populations using both clinical trials and qualitative studies. These findings draw attention to the lack of mind-body interventions that have been offered for AACS, despite qualitative studies and surveys that discuss AACS interest and use of mind-body medicine and other complementary and alternative therapies to address physical and psychological concerns. This review also demonstrates that recent research indicates the feasibility of recruiting and retaining AACS into mind-body intervention trials. This review is limited in that some of the studies included did not have exclusively African American populations and did not report their results by race, so the review used the aggregated results in these instances. Additionally, the studies with the largest sample sizes in this review were generally exclusive to African American breast cancer survivors, which may affect generalizability of the review's findings. However, this also indicates a clear need to offer mind-body interventions to African Americans with other types of cancer.

Recommendations for Future Mind-Body Interventions for AACS

Despite reports^{10,13} that African Americans prefer to use CAM practices that are spiritual or meditative, previous interventions thus far have not included spirituality or meditation as a primary component. Spirituality or church emerged in the results of 3 qualitative studies^{8,24,26} and the somatic yoga intervention,¹⁵ but only Hamilton et al.'s descriptive study asked participants direct questions about the relationship between their spirituality and cancer survivorship.²⁶ Future studies seeking to offer a mind-body intervention for AACS may consider including measures that address spirituality from the beginning.

Most clinical trials and qualitative studies exploring CAM for AACS included only breast cancer survivors.^{8,19-25} There were fewer articles available concerning male AACS perceptions or use of CAM but the samples that included both men and women did not report gender-related differences in outcomes. A 2007 qualitative study on male AACS perceptions^{27,28} of CAM documented that prayer was the most commonly used CAM modality, consistent with this review's findings.²⁸ A descriptive study of primarily low-income AACS and a 48% male population found participants were most interested in interventions with educational components and stress-management techniques such as music therapy or meditation.²⁷ These findings are consistent with more recent qualitative studies with predominantly female AACS populations.

We did not find any trials or qualitative studies that explored the relationship between AACS and other forms of mind-body exercise besides yoga, such as Tai Chi or Qigong. In a survey of primarily African American cancer survivors, only 22% reported awareness of CAM practices,¹¹ so AACS may not be aware of or have access to participate in other forms of mind-body practice. Additionally, no interventions or qualitative studies addressed remote-delivery of CAM exercise interventions: both remotely delivered interventions^{19,20} were psychoeducational. Given the importance of social support to AACS populations, a remotely-delivered exercise intervention may consider alternative ways of incorporating social support.

Implications for Practice and Research

If oncology teams are aware of AACS' interest and use of CAM to improve quality of life and reduce cancer-related stress, they can inquire about their patients' CAM use. This information can further future research, as AACS use of CAM is often underreported.⁹ These findings can also help healthcare professionals offer appropriate resources for AACS. African Americans have consistently reported that their healthcare providers should provide more information regarding physical activity guidelines and opportunities to practice CAM.^{11,29} Healthcare teams should refer AACS to mind-body interventions that are culturally sensitive and provide social support frameworks, such as those with a spiritual component or community-based exercise interventions. Since African Americans feel more comfortable and inclined to participate in mind-body interventions with facilitators of the same racial background,³⁰ healthcare professionals should refer AACS to mind-body practices with African American facilitators whenever possible. Ensuring the availability of African American healthcare providers and intervention facilitators can reduce medical mistrust that may surface as a barrier to participation in mind-body practice. African Americans are underrepresented in mainstream cultural depictions of mind-body practice; cultural understanding, representation, and support can help AACS

feel that mind-body interventions apply to their lifestyle and culture.

Future research should focus on offering mind-body interventions to AACS, as there is sufficient data that demonstrates AACS' interest in mind-body modalities. Studies should include an African American instructor and provide a framework for social and peer support throughout the intervention. AACS' have demonstrated receptivity to dyad or family-based interventions.^{8,16,18,29} Future studies could choose to offer intervention types of particular interest to AACS, such as meditation, spirituality, and yoga.

Conclusion

This integrative review noted that there has been a limited number of mind-body interventions offered to AACS. Past interventions have used psychoeducation, yoga, and mindfulness to address a variety of physical and psychological aims. Mind-body modalities are unique because they engage both the body and mind and address the wide variety of symptoms that cancer survivors experience, potentially improving physical fitness, anxiety, depression, fatigue, pain interference, and QOL. Several qualitative studies and surveys have demonstrated the acceptability of mind-body practice, especially mindfulness, yoga, and spiritual practice, among AACS. The qualitative data included in this review outlined components of successful mind-body interventions, such as social support and culturally sensitive resources. Mind-body interventions designed for the needs of an AACS population would provide more insight on how mind-body exercise may meet the needs of the growing population of AACS.

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