

**A Rapid Review of the Literature:
Cardiovascular Disease Preventive Practices and
Rural Black Women**

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A Rapid Review of the Literature: Cardiovascular Disease Preventive Practices and Rural Black Women

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Introduction

Cardiovascular disease (CVD) accounts for more U.S. deaths annually than all forms of cancer and chronic lower respiratory disease combined (Tsao et al., 2022). Black people have the highest prevalence of CVD, are more than twice as likely to die from heart disease, and are most likely to have modifiable clinical risks factors such as high blood pressure, diabetes, and obesity than any other race (Ard et al., 2017; Dickson et al., 2013; Foley et al., 2012; James et al., 2018; Juan, 2014; Scarinci et al., 2014). People living in rural areas in the U.S. suffer disproportionately from preventable diseases (Befort et al., 2012; Foley et al., 2012; Yang et al., 2012). Not surprisingly, Black women are at a higher risk of preventable chronic illnesses than their White counterparts (Ard et al., 2017; Dickson et al., 2013; Foley et al., 2012; Juan, 2014; Scarinci et al., 2014; D. R. Williams, 2008). Rurality escalates the figures further, making rural Black women especially vulnerable to CVD.

The intersections of social determinants of health (SDOH) and gender-related sociocultural experiences and practices beyond geography and location complicate rural Black women's vulnerability (Juan, 2014; Zahnd et al., 2021). These intersecting factors require multifaceted interventions for lifestyle modification to prevent and manage CVD and the related risks factors (Eckel et al., 2014; Lloyd-Jones et al., 2010; Seguin et al., 2015; Siegel et al., 2012; Smith et al.,

2011). However, such interventions are often not rural and cultural-sensitive or accessible to rural Black women because of the lack of resources (Dickson et al., 2013; James et al., 2018) and the stresses related to structural racism (Juan, 2014; Taylor-Clift et al., 2016). Consequently, the geographic determination of health status, similar to that seen in Murray's Eight Americas (Murray et al., 2006) and the conception that where one lives could influence how long they live (Barber et al., 2016; White et al., 2008).

There is an increasing need for evidence-based practice guidelines to address CVD and other health disparities among rural Black women, as is found in the U.S. Preventive Services Task Force website

(<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation->

[topics](#)). In 2019, Congress passed Bill H.R. 4004--Social Determinants Accelerator Act of 2019, which supports the development of strategies that improve the health outcomes of vulnerable populations without denying them services (Social Determinants Accelerator Act of 2019). The guidelines could be relevant, frequently updated, pre-appraised evidence easily retrieved in practice to improve rural Black women health outcomes and address disparities. However, to our knowledge, such research-based guidance needs to be present. In this rapid review, we aimed to provide a comprehensive collection of evidence-based and promising self-care practices and programs to address the CVD disparities due

to race, gender, geography, and other SDOH. Additionally, we wanted to report and discuss evidence-based programs that provide best practices for rural Black women with CVD. The results of this rapid review point to a lasting and correctible reason for the disparity: there needs to be more-documented evidence.

Background

According to the United States Department of Agriculture, Economic Research Service, Black/African American people make up 7.8% of the rural populations and live in counties with high and persistent poverty rates (<https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail>). Approximately 58.8% of U.S. Black women have some form of CVD or risk factor (Tsao et al., 2022). Cardiovascular disease is the leading cause of death among Black women (23.1%), with elderly rural women often dying within weeks of a heart attack (Benjamin et al., 2019; Brundisini et al., 2013; James et al., 2018). Accessible, evidence-based lifestyle modification strategies for risk reduction and CVD prevention, such as self-care, can address these disparities (Juan, 2014; Lloyd-Jones et al., 2010; Taylor-Clift et al., 2016; Zahnd et al., 2021). Unfortunately, self-care programs are often inaccessible to rural residents due to geographic inequities, lack of care coordination, and general lack of resources and healthcare services attributed to the rural SDOH (Brundisini et al., 2013; Choshi MM et al., 2020; Valencia HE et al., 2011). Most recommendations for appropriate self-care behaviors, such as engaging in physical activity and healthy food choices, are not sensitive to rural Black women's culture; therefore, they are not beneficial for this vulnerable population (Eckel et al., 2014; Goff et al., 2014; Perel

et al., 2015; Smith et al., 2011; Vanstone et al., 2013).

Rural Black women face challenges of access to healthy foods, safe and affordable recreation facilities, and primary and specialty healthcare providers (Befort et al., 2012; Brundisini et al., 2013; Dickson et al., 2013; Juan, 2014; Vanstone et al., 2013). Researchers reported that the female gender and low socioeconomic status decrease rural Black women's chances of referral to a cardiac specialist or cardiac rehabilitation services (Juan, 2014; Williams, 2008). Additionally, rural and remote living strongly isolate rural Black women from social networks that protect against debilitating chronic stress, which is a predisposing factor to CVD risks such as high blood pressure and diabetes. Structural racism in public health and healthcare practice perpetuates these risk factors (Ebong & Breathett, 2020).

Culture also plays a role in developing and perceiving self-care practices in ethnic minorities with chronic illnesses (James et al., 2018; Siegel et al., 2012). Most often, Black people perceive and experience bias in the health care system and its delivery of care (Williams et al., 2014). Therefore, they delay seeking care until their disease has advanced, often resulting in higher levels of debility and increased treatment costs. Regardless of these known factors, public health leaders often overlook rural racial and ethnic minorities' needs when allocating resources (James et al., 2018). Most studies compare rural and urban variations, ignoring the racial and ethnic differences within rural communities (Vanstone et al., 2013; Williams et al., 2004). Health providers and policymakers must consider rural Black women's gender-related sociocultural experiences, practices, and health perceptions when developing self-

care programs (Dickson et al., 2013; Foley et al., 2012; Juan, 2014).

Methods

We followed the Virginia Commonwealth University's Rapid Review Protocol to define and refine the research question. Therefore, the PICOT (population, intervention, comparison, outcome, and time) question is the self-care behavior, practices, and programs for rural Black/African American women with CVD. James Madison University Library databases, PubMed, CINAHL, Web of Science, PsycInfo-Embase, and Scopus, were searched for studies published between 2010-2022. The researchers also hand-searched the reference lists from the retrieved peer-reviewed articles to identify additional articles that matched the inclusion criteria.

The databases were initially searched using Medical Subject Headings (MeSH), but the results were limited. The advanced search feature was used with these terms: rural, Black, African American, women, female, heart disease, and cardiovascular disease/s, which generated 2,688 citations. Additional filters included articles, humans, English, open access, and peer-reviewed journals, which generated 288 articles. Systemic and integrative reviews and studies not done in the U.S. were excluded. Six additional articles were found in the grey literature at <https://clinicaltrials.gov/>.

Two reviewers (authors) independently and manually screened the articles using the titles and the abstracts. Three articles were identified from the databases and the grey literature that met our inclusion criteria. Two articles considered promising but only meeting some criteria are also discussed. See

Figure 1 for an overview of the search strategy for this rapid review.

Inclusion criteria, based on our PICOT question: Population included rural and remote Black/African American women ages 18 and older with CVD in the United States. Interventions included studies investigating programs on self-care behaviors to prevent or manage CVD and the risk factors thereof. Comparison studies were included whether they did or did not have comparison groups. Outcomes were strategies researchers used to engage rural women and their facilitators, challenges, barriers, and contextual factors.

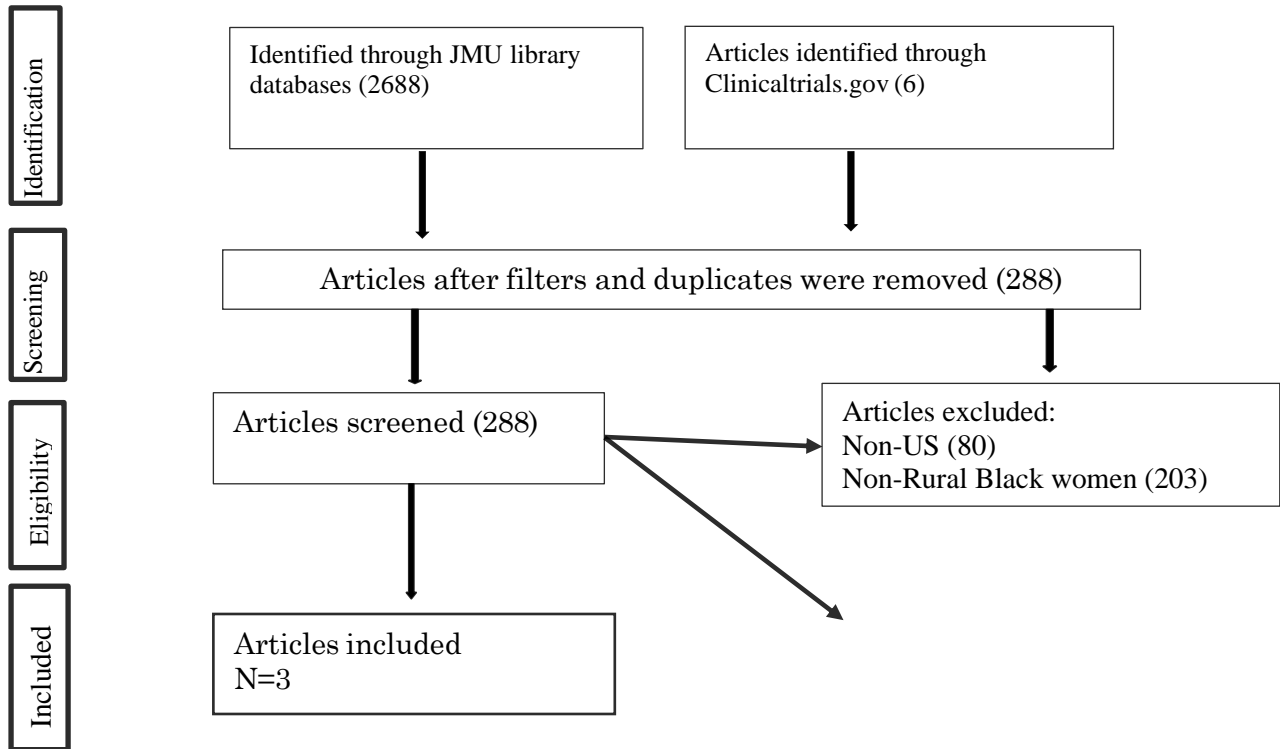


Figure 1: Flow diagram of the search strategy

Promising articles (2)

Quality Appraisal and Evidence Synthesis

Selected studies were synthesized and reviewed to summarize the evidence-based and promising self-care practices and programs to address the CVD disparities in rural Black women. The findings were examined for study design, purpose, sample size, procedures, and findings (See Table 1).

Rural Black women were notably affected by CVD and its risk factors, and there is a knowledge gap regarding which interventions work (Parra-Medina et al., 2011). The three studies included in this review that met all criteria were experimental randomized controlled trials. Two addressed obesity in rural Black women (Ard et al., 2017; Foley et al., 2012); one promoted physical activity and healthy eating (Scarinci et al., 2014).

Ard et al. (2017) used an intervention to increase weight loss. Foley et al. (2012) used an online interactive intervention to prevent overweight rural Black women from gaining weight. All of the studies acknowledged the underrepresentation of rural Black women in intervention development and research, which could contribute to CVD disparities. The authors recommended additional research using different approaches to develop self-care behaviors programs for rural Black women CVD prevention.

Collaborative institutional-community partnerships may be the best route to combating the health disparities and inequities experienced by rural Black women (Ard et al., 2017; Scarinci et al., 2014). Researchers from the University of Alabama Birmingham reported they had an excellent infrastructure to establish relationships with rural communities from the beginning of the study (Ard et al.,

2017; Scarinci et al., 2014). They partnered with community members to identify and address priority problems and to develop and implement interventions. Through these partnerships and community involvement, the researchers could reach rural Black women, whom they might have yet to be able to access.

Ard et al. (2017) tested the effectiveness of an adapted Journey to Better Health (JTBH) weight loss intervention delivered by community health advisors. The JTBH was developed based on Black women's weight-related beliefs on body image. Black women may be comfortable with a body that is curvy or heavy. Because of these beliefs, the community health advisors participated in identifying the problem and weight loss intervention, developing a research proposal, and adapting the program until the testing and implementation stage. The researchers trained community members to administer the intervention. In studies where community members administered the intervention, participant retention and attendance at intervention sessions were considerably higher than those that used health professionals or non-community members to administer the interventions. Participants in the intervention achieved average weight loss, which was attributed to the use of lay community health advisors who understood them.

Scarinci et al. (2014) also used a specific method selected by the community to test the efficacy of a culturally relevant intervention to promote healthy eating and physical activity among rural Black women. Participants advised researchers not to designate the program as a "weight loss" intervention because rural Black women do not take the idea in a positive way. Because of this negative connotation towards weight loss, researchers did not measure weight, per se; they measured

how often participants engaged in weekly physical activity, consumed fruits and vegetables, or consumed fried foods. After 12 months, participants increased their consumption of fruit and vegetables, decreased their consumption of fried foods, and increased physical activity to four to five times per week. At the 24 months follow up, participants had decreased physical activity. However, some were able to maintain their healthy eating styles. These intermediate measures were successful, and the authors attributed this to the adopted change in culturally appropriate concepts.

Beyond the sociocultural experiences of Black women in general, both the Ard et al. (2017) and Scarinci et al. (2014) studies highlighted specific geographic challenges faced by rural Black women: remoteness, isolation, lack of recreational facilities and safe sidewalks to engage in physical activity, and lack of healthy foods. These challenges, consequently, lead to increased obesity, CVD, cancer, and other chronic illnesses (Ard et al., 2017; Scarinci et al., 2014). Lack of nutritional and physical education also hinders self-care behaviors for CVD prevention.

Despite a promising study plan and some evidence of efficacy, the Shape program to prevent weight gain in overweight and class one obese Black women did not report meaningful outcomes after 12 months (Foley et al. 2012). This study was somewhat complicated to interpret. The study enrolled rural Black women with a body mass index (BMI) between 25 and 34.9kg/m² with a primary goal of maintaining or not gaining weight over 12 months. The reason behind the specific BMI was that Black women, in general, preferred heavier body weight. The researchers used an interactive obesity

treatment approach to produce weight change through the modification of routine obesogenic lifestyle behaviors, such as consuming five or more fruits and vegetables per day, no fast food or sugary beverages, and walking 7,000 steps a day (Foley et al., 2012). The authors did not clearly explain the impact of the different aspects of the Shape program on their goals. The latest published study by the same researchers alluded to the success of the Shape program in the prevention of weight gain in Black women; however, the article only published one aspect of the program, moderate-vigorous physical activity (Greaney et al., 2017). This study (Greaney et al., 2017) was not specific to rural Black women.

Although specifically designed for rural Black women, the Foley, et al. (2012) study was not community-based and did not appear to address challenges particular to rural geography and rural Black women's cultural and linguistic preferences. The lack of success of the intervention cannot be conclusively laid at the feet of the technology; however, studies of Black women highlight the cultural importance of human contact and social interactions (Dickson et al., 2013; Scarinci et al., 2014). Both Ard et al. (2017) and Scarinci et al. (2014) studies attributed the particular importance of community participation to their success.

“Promising” Studies

One study proposal and one completed study found in the literature merit mention here. The Strong Hearts, Healthy Communities program (Seguin et al., 2015) proposed a randomized controlled trial comparing a community program to a minimal control intervention (Strong Hearts, Healthy Women) to address chronic disease risk among rural women. While the proposal was well-

designed, appeared to be culturally relevant, and the community informed the study by community participation, the study results were not in a follow-up literature search. In addition, the proposal did not meet the criteria for Black women specifically. The Heart Healthy and Ethnically Relevant Lifestyle Trial (Parra-Medina et al., 2011) was an evidence-based, community-appraised program to address physical activity and diet in Black women but did not examine rural Black women specifically. The study was a randomized controlled trial comparing the standard care intervention to a comprehensive intervention to increase moderate-vigorous physical activity and decrease dietary fat intake (Parra-Medina et al., 2011). Both physical activity and dietary fat intake were improved at six months (although confidence intervals were wide), and 12-month comparisons of experimental groups were either insignificant or less significant than at six months. Both studies mentioned here show that robust study designs, culturally relevant interventions, and community participation and will be worth following in the future.

Table 1: Summary of Studies of Self-care Practices to Prevent Cardiovascular Disease.

Authors/Citation	Study Design	Purpose	Sample	Procedures	Results
Ard et al., 2017	Cluster Randomized control trial	To test the effectiveness of an evidence-based behavioral weight loss intervention delivered by community health advisors to African American women in the rural South	409 African American women age 30 to 70 years (Intervention N=154, control N=255)	Compared evidence-based behavioral weight loss program augmented with community strategies to support healthy lifestyles (Weight Loss Plus) with weight loss program alone (Weight Loss Alone)	Participants lost 3.2kg in Weight Loss Plus and 2.2kg in Weight Loss Only.
Foley et al., 2012	Randomized control trial	Weight gain prevention intervention among overweight and Class 1 obese Black female patients in a primary care setting (The SHAPE Program)	194 Black women (Age 25 to 44years)	Compared 12 months of tailored obesogenic behavior change goals, self-monitoring via interactive voice response phone calls, tailored skills training material, 12 counseling calls with a registered dietitian, and a 12 months YMCA membership with usual care	No results reported
Scarinci et al., 2014	Cluster Randomized Control trial	Examine the efficacy of a community-based, culturally relevant intervention to promote healthy eating and physical activity among African American (AA) women between the ages of 45–65 years, residing in rural Alabama.	565 African American women age 45 to 65 years	Evaluated two interventions: (1) promotion of healthy eating and physical activity (healthy lifestyle), and (2) promotion of breast and cervical cancer screening (screening).	A decrease in the consumption of fried food and increase in fruits and vegetable intake and physical activity for healthy lifestyle group.
Promising Studies					
Seguin et al., 2015	Proposal -- Randomized control trial	To compare a multi-level, community program (Strong Hearts, Healthy Communities) with a minimal intervention control program (Strong Hearts, Healthy	Not specific to rural Black women Rural underserved community members will		Study protocol: no results.

		Women).	be recruited		
Parra-Medina et al., 2011	Stratified randomized control trial	To evaluate a culturally appropriate theory-based lifestyle intervention targeting physical activity and dietary fat intake among African American women at high risk for cardiovascular disease.	Not specific to rural Black women 266 low-income African American women aged 35 years and older	All participants received the standard care intervention during their appointment: motivational, stage-based behavioral counseling from their primary care provider; nurse-assisted goal setting; a community resource guide featuring free or low-cost programs and facilities; and ethnically tailored educational materials. Comprehensive intervention participants received standard care plus the following: 12 motivational, stage matched, ethnically tailored newsletters over 1 year; an in-depth, introductory telephone call; and up to 14 brief, motivationally tailored telephone counseling calls from research staff over 1 year.	The comprehensive intervention group showed significantly greater improvements (reduction in risk score) over time than did the standard care group for the DRA total score and for the meat and the dairy products and eggs subscales.

Discussion and Recommendations

In this rapid review, the authors aimed to provide a comprehensive collection of evidence-based and promising self-care practices and programs to address the CVD disparities due to race, gender, geography, and other SDOH. Self-care is an essential component for CVD prevention for people in general. However, evidence-based self-care programs may not be easily accessible or culturally sensitive to rural Black women (James et al., 2018; Parra-Medina et al., 2011; Scarinci et al., 2014). The literature was searched based on the following PICOT question: self-care behaviors, practices, and programs for rural Black/African American women with CVD. There is minimal documented evidence-based self-care practices and programs for this population. The U.S. public health and health care systems need help with the intersections of SDOH and gender-related sociocultural experiences and practices impacting rural Black women's CVD outcomes (Zahnd et al., 2021). From this minimal set of studies, a few tentative conclusions and future directions for research and intervention are derived. First, CVD has several modifiable risk factors, obesity being one of them, such as diabetes, high blood cholesterol, high blood pressure, and smoking. Undeniably, obesity is associated with multiple chronic diseases and multiple CVD risk factors among rural women (Havranek et al., 2015; Murray et al., 2006; Yang et al., 2012). Weight, taken in isolation and interventions aimed only at obesity are likely inadequate.

Second, rural Black women's cultural beliefs impact their perceptions of obesity (Ard et al., 2017; Foley et al., 2012; Scarinci et al., 2014). The development of JTBH intervention (Ard et al., 2017), not using the "weight loss" phrase in the

program (Scarinci et al., 2014), and only enrolling rural Black women with BMI between 25 and 34.9kg/m² in the study (Foley et al., 2012) were all reported to be based on some form of weight-related beliefs among Black women. These beliefs, not exclusive to rural Black women, but to Black women in general, include a preference for bigger body size, cultural acceptance of obesity, and dissatisfaction associated with thinness. Body image and attractiveness in Black women are not associated with being thin but with heavier or curvier weight.

Third, poor access to health care services and health-promoting interventions contribute to health disparities among rural Black women. Although the Foley et al. (2012) study did not mention this specifically, the use of an online interactive obesity intervention to enhance moderate physical activity may have been intended to increase access to resources for rural women. More critically, racism underlying the structures of American society (including health care) is not addressed in randomized controlled trials of single, uncomplicated risk factors for CVD prevention. Rural Black women experience multiple challenges from these inequitable systems, including constant exposure to chronic stress (Zahnd et al., 2021).

An essential feature of the Ard et al. (2017), Scarinci et al. (2014), Parra-Medina et al. (2011), and Seguin et al. (2015) studies (but not the Foley et al. (2012) or Greaney et al. (2017), the Shape program studies) was that they were all community-based studies. Disparities in services and underlying racism will not be solved by only ensuring rural Black women are active participants, advisors, and evaluators in any study involving them. However, their inclusion will go a long way to ensuring culturally mistaken

confounders are excluded from studies and, more importantly, will ensure a socially just research agenda.

Limitations

The inequities that produced the CVD disparities in rural Black women contribute to the limitations of this review and the studies appraised. There is very minimal evidence documented for self-care behaviors, practices, and programs for CVD prevention for rural Black women. There were only three studies that fit the inclusion criteria for our PICOT question. There needs to be more attention to disadvantaged populations' problems to ensure an adequate research base to solve those problems. In addition, the need for self-care programs to prevent CVD and manage risk factors in rural Black women may be confounded by a lack of attention to culturally appropriate interventions.

More traditional research limitations include obesity being the only clinical risk factor considered by these studies, allowing only a narrow application of findings. Also, the studies looked at only decreased physical activity and healthy food consumption related obesity. Although the participants demographics were not discussed in the results of the studies reviewed, they are worth mentioning here as they can be limitations, especially for this specific population. First, the age of study participants varied (24-45 in Foley et al., 45-65 in Scarinci et al., and 30-70 in Ard et al.). Age may affect diet and exercise outcomes, making these studies non-comparable or affecting generalizability to a different aged population. Second, most women in these studies had graduated from high school or had a college degree and had incomes above the poverty level. Education and economic stability are social determinants of health (Goff et al., 2014; Havranek et al., 2015; Smith et al., 2011). Those with more education and higher

income have better access to care, may engage in more health-promoting activities, and may be thinner and generally more resourceful than their less advantaged counterparts. Considering these aspects, these studies may only include some rural Black women who live in poverty.

Conclusions

Cardiovascular disease is the leading cause of death among rural Black women. Self-care is an essential component for CVD prevention and risk management. In this rapid review, we aimed to provide a comprehensive collection of evidence-based self-care behaviors, practices, and programs for rural Black women to address the CVD disparities. Unfortunately, there is minimal documented evidence for effective interventions. Culturally appropriate evidence-based self-care programs are not easily accessible to rural Black women, the population that needs them the most.

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