

PERCEPTIONS OF HYPERTENSION AND CONTRIBUTING PERSONAL AND ENVIRONMENTAL FACTORS AMONG RURAL SOUTHERN AFRICAN AMERICAN WOMEN

Objective: This study aimed to describe the perceptions of Southern, rural, African American women regarding personal and environmental factors that affect their hypertension.

Design: A purposive sample of 25 African American women aged 40–74 years, who lived in rural Alabama, participated in seven Talking Circles for 60 minutes.

Results: Most felt that hypertension was a “common occurrence” and that it was “typical in the African American community.” They associated hypertension with stroke and heart attacks and referred to hypertension as the “silent killer.” Barriers to following the treatment plan were low income, high medical expenses, and lack of insurance. Barriers to medication were cost, dislike for taking medication, running out of medication, side effects, forgetting, and being tired; and barriers to exercise were being tired, busy schedule, and safety. Walking paths, fitness centers, or malls to walk around were not available in all communities, and not all sidewalks were well-lit, limiting their walking exercise opportunities after work hours. Healthcare facilities were accessible, but it was easier to get an appointment and receive respect from healthcare providers if the women had money or insurance. Blood pressure monitors were available in their homes, at grocery stores and at Wal-Mart. No church health programs were available, but some churches had nurses on duty who offered blood pressure and cholesterol screening; however, no medication was provided. Grocery stores were accessible, and they had a flea market with fresh fruits and vegetables. Social environment/support by families and friends for persons with hypertension was not always positive.

Conclusion: The findings of this study indicate that personal and environmental factors play important roles in hypertensive status. The modified ecological framework used in this study may help us explore perspectives of family members and friends regarding their support for persons with hypertension. More serious efforts and resources need to be made available for preventive measures of hypertension in this population. (*Ethn Dis.* 2009; 407–413)

Key Words: Southern, Rural, African American, Women, Hypertension

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INTRODUCTION

Rural Alabama has seen a disproportionately high rate of mortality from cardiovascular disease (CVD) in comparison to other parts of the United States.^{1,2} Furthermore, African American women in rural areas suffer from a disproportionately high rate of morbidity and mortality from CVD.^{3,4} African Americans account for only 23.3% of the female population in Alabama, yet African American women have the highest death rate from heart disease.⁵ Nine out of 13 counties in Alabama with the highest rate of death from heart disease were rural.² Rural women may be at increased risk for CVD because they are more likely to be physically inactive and to have poor diets.^{4,6,7}

Hypertension is a major contributing factor to the development of CVD, and CVD is the leading cause of adult deaths in the United States, affecting 73 million people each year.¹ One third of adult Alabamians have hypertension (33.6% have hypertension at the national level); by 2020, it is projected that 327,235 adult Alabamians will be hypertensive.^{1,8,9} Because of the link between hypertension and CVD, healthcare providers need to better understand rural African American women’s perceptions about personal and

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environmental factors related to hypertension. Little is known about rural Alabamian African American women’s perceptions of these factors that may lead to the high prevalence of hypertension among this vulnerable population. Perceptions have been shown to play important roles in overall health and health behaviors.^{10–12} Therefore, the purpose of the study was to describe the perceptions of hypertensive Southern, rural, African American women regarding personal and environmental factors that affect their hypertension and how these factors influence their health behaviors and their approach to the treatment and/or control of their hypertension.

CONCEPTUAL FRAMEWORK

A modified version of an ecological framework^{13–15} incorporating relevant concepts from the Health Belief Model^{16,17} was developed for this study. This ecological framework, a comprehensive model, included personal and environmental factors that interact together to influence individuals’ health behaviors. Each factor is further divided into major concepts and subconcepts.

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For the purpose of this study, the personal factors included the following major concepts: psychosocial factors, biological vulnerability, experiential indicators, behavioral indicators, and demographic characteristics. The psychosocial factors consisted of women's perceived severity, benefits, and barriers. The biological vulnerability subconcept consisted of personal and family health history and physical-physiological indicators, such as blood pressure and body mass index (BMI). The experiential indicators subconcepts were perceived symptoms,¹⁸ whereas the behavioral indicators subconcepts included frequency of reported blood pressure checks, medication adherence, and medical follow-up. The demographic characteristics were women's socioeconomic status, occupation, and education level. The environmental factors included social environment, which addressed the degree and type of family and friend support as well as family's and friends' perceptions of hypertension, and physical environment, which included accessibility of physical activity and healthcare facilities and access to healthy foods.

METHODS

The research design was the qualitative description methodology¹⁹ using Talking Circles (TCs) as the data collection technique. TCs are similar to focus groups, as they have been used to "share information," whether it is with the researcher or the participants. Talking Circles are held in an environment that is supportive, similar to focus groups that foster participation.^{20,21} There is some variation in what people regard as the ideal size, from three to five participants to five to 20 participants, for focus groups.^{21,22} TCs are a culturally appropriate method for examining the naturally occurring exchanges of minority populations. The work of Johnson et al²³ supported the use of this methodology in a study that

was conducted with minority women in a similar geographic area. A smaller number of participants, generally three to five individuals, was used as a guide in this study, based on consultation with the study's first author, R. Johnson (personal communication, 2005); however, one group was conducted with two due to the unexpected absence of some participants.

A total of seven TCs, consisting of two to 10 women, were conducted in five churches and one home. The pilot TC, discussed later, was one of the seven. Two TCs were conducted in the same church, with different participants in each group. Approval from the University of Illinois at Chicago institutional review board (IRB) was obtained before beginning the study.

Sample and setting

A purposive sampling technique was used to recruit participants for this study. Sample selection criteria were: women who self-reported as hypertensive, as being aged between 40–74 years, as African American, as English-speaking, and as rural dwellers. The rural area in this study was a micropolitan statistical area with a population of 50,000 or less,²⁴ and rural dwellers were those women who resided in the designated rural community for a minimum of five years²⁵ (F. Gary, personal communication). Twenty-five women meeting the selection criteria were invited to participate in this study.

Instruments

The data for this study were obtained from three sources: the Talking Circle (TC) Interview Guide, the Demographic and Health History Information Form, and blood pressure and BMI measures.

The TC Interview Guide was developed by the researcher using ordinary language to assess women's perceptions about personal and environmental factors that affect their hypertension. The questions in the TC Interview Guide

were guided by the conceptual framework described above. The TC Interview Guide consisted of 26 questions and several probes. Eleven questions addressed personal factors, and 15 questions addressed environmental factors. The TC interview guide was reviewed by three experts for content validity. The researcher conducted the TC in approximately 60 minutes.

The Demographic and Health History Information Form, developed by the researcher, was used to gain information regarding basic demographic information, as well as personal and family health history of the participant. The form was self-administered and consisted of 25 items measuring: personal and family health history of heart disease, hypertension, and diabetes; the presence/absence of symptoms; frequency of blood pressure checks; medication adherence; and medical follow-ups. The form took approximately 10 to 15 minutes to complete.

A resting blood pressure reading was obtained from each of the participants, using the standard procedure for measuring blood pressure according to the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure Guidelines.²⁶ Blood pressures were measured using an appropriate-sized cuff (cuff bladder encircling at least 80% of the arm for accuracy) in a sitting position with the arm at heart level. Two measurements were made five minutes apart.²⁶ Small, medium, large, and extra-large cuffs were available.

Body mass index (BMI) was assessed using self-reported height and weight. Actual measurements of height and weight were not made, as some participants' weights could exceed the limits of the portable standard scale and finding a private place for weighing each individual posed a problem.

Procedures

Key community informants were instrumental in helping the researcher

locate 12 local churches within the rural community as recruitment and data collection sites. These churches' denominations included African Methodist Episcopal (AME), Baptist and Pentecostal. Their congregations were African American and varied in size, with a general membership of 50 to 175 people.

The researcher had telephone and/or face-to-face meetings with the pastors to seek the pastors' assistance. Pastors were asked to introduce the study to their congregations. They made an announcement at the pulpit and/or in the church bulletin and introduced the researcher to the congregation. The researcher addressed the congregation and was available after the service for questions about the study. Flyers were also placed in the church programs or handed out to the congregation.

Before data collection began, a pilot study was conducted to determine the feasibility and appropriateness of the data collection measures for this population. The pilot study consisted of one TC with a group of three hypertensive women aged 40–65 years in a rural community in Alabama. The data collection procedure was the same as mentioned above. These women agreed to hold the TC in one of the participant's home. Upon completion of the TC, participants had no suggestions for change. They stated that they enjoyed the group discussion and appreciated a set of seven booklets on hypertension and CVD (http://www.nhlbi.nih.gov/health/pubs/pub_slct.htm#afam) distributed at the end of the TC as a token of appreciation for their participation. These booklets were also provided to participants in all TCs.

Following the pilot TC, the researcher held other TCs when three to five women volunteered to participate and the date and time were decided. TCs were held in the afternoon or evenings in a comfortable, informal way in a private place in the church with the permission of the pastor. If the partic-

ipants requested, the researcher made a reminder phone call on the day prior to the TC. The researcher used the TC Interview Guide to conduct TCs. Ample opportunities were given for their responses and comments. Healthy snacks were provided for the women when they arrived, as well as throughout the TC. Before the TC, the researcher took participants' blood pressures and administered the Demographic and Health History Form. Blood pressure measurements were recorded on the Demographic and Health History Information Form as well as on a card that was given to the participant. BMI was calculated using the weight and height after the TC was completed. All TCs were audiotaped, and field notes were taken.

Upon completion of the TC, participants were thanked for their participation, and a small gift (a video cassette on CVD and hypertension from the Association of Black Cardiologists, Inc.) was given to each church where recruitment took place. Saturation appeared to be reached with the seventh TC; therefore, the study was concluded at that time.

Data analysis

Responses of the women related to perceived personal and environmental factors were analyzed using qualitative content analysis described by Kruger and Casey's methodology for analyzing focus groups.^{19,20,27} Inter-coder reliability between the researcher and the members of the research team was 91%. Trustworthiness was achieved through establishing credibility, dependability, and neutrality, as described by Lincoln and Guba.²⁸ Demographic and biologic factors, as well as the hypertension-related health status of participants, were described utilizing descriptive statistics.

RESULTS

The women had a mean age of 56 years (*SD*=8.78 years), and most were

Table 1. Demographic characteristics of the participants (N=25)

Characteristics	N	%
Age (years)		
40–49	6	25
50–59	9	33
60–69	7	29
70–74	2	8
Education		
Junior high school	2	8
High school	9	36
Trade school	4	16
Junior college	3	12
Undergraduate degree	3	12
Graduate degree	4	16
Employed		
Yes	13	52
No	12	48
Marital Status		
Single	3	13
Married	13	54
Widowed	4	17
Divorced	4	17
Income		
<\$10,000	8	35
\$10,000–\$19,999	5	22
\$20,000–\$30,999	3	13
\$31,000–\$40,999	3	13
\$41,000–\$50,999	2	9
>\$51,000	2	9

Note. The total percentages for each item may range from less than/greater than 100% due to rounding and/or missing participant responses.

married, employed, and educated beyond high school. The majority (57%) had yearly incomes ≤\$19,999. (Table 1).

Perceptions of hypertension

All the groups felt that people in their church were likely to have hypertension, that hypertension was a “common occurrence,” which was “typical in the African American community.” They associated high blood pressure with stroke and heart attacks: six of seven groups reported stroke, and four reported heart attack. They felt that, “Stroke and heart attack ... it all works there together.”

Perceptions of personal factors

Four groups perceived hypertension to be a “serious” disease that could lead

to stroke and death. Death occurring as a result of not following the treatment plan was mentioned by six of seven groups.

Hypertension was also referred to as the “silent killer” in four groups, as it is difficult to identify due to its lack of symptoms. One participant stated, “Mine is the silent killer. You know it can be sky high and I don’t even know it unless I check myself or the doctor checks me or whatever...Didn’t feel bad, not anything.” Another person commented that, “It can shoot up at a second’s notice and you can take it and it’s normal. The next second it can be too high or something.”

Barriers to following the doctor’s treatment plan reported by all groups were low income, high medical expenses, and lack of insurance. All groups thought that healthy foods were expensive. Comments included, “...can’t afford the food you need to eat and you buy what you have to eat to survive;” “See some people have to sacrifice for their medicine instead of their food.” All groups also related that it was difficult to prepare food for their family that was tasty and then prepare different food for themselves that was tasteless. One participant commented:

“It just breaks my heart. I got to go in that kitchen and cook a big dinner for my family.... And I don’t supposed to eat it. And I’ll cook theirs first and then I’ll look back and say I can’t have that. Then I’ll cook me a little something without the salt, without any taste. Cause [sic] it don’t taste good.”

Another participant said, “...I don’t like cooking no two different things ‘cause kids eat one thing. I’m gone cook what they eat. I’m just gone sacrifice and eat what everybody else eat.”

Barriers related to medication were discussed by all groups. These barriers included cost, dislike for taking medication, running out of medication, medication side effects, forgetting, and being tired. Comments included, “If

you run out and don’t get ‘em. Don’t have the money to buy ‘em. Sometimes you just don’t take ‘em ‘cause you don’t have the money to get ‘em. They so expensive.” Another woman said, “The kind I take, it make me use the bathroom a lot and it drains me. It have me tired.”

All groups discussed barriers related to exercise, including “laziness,” being tired, having a busy schedule, “the weather,” and safety. Comments included, “Too tired to walk everyday” and “Try to tell the truth about mine – lazy.”

Biological vulnerability was related to personal and family health history and physical-physiological indicators, such as blood pressure and BMI. Tables 2 and 3 provide a quantitative description of the women’s biological personal health history and their family health history, respectively. Systolic blood pressures ranged from 110–162 mm Hg, and diastolic blood pressures ranged from 61–91 mm Hg. Mean BMI was 32.91 (*SD*=7.36), with a range of 23.29 to 50.29. A BMI of 25 or greater is associated with increased risk of developing complications from hypertension and CVD.¹

Experiential indicators, described quantitatively in this study, were perceived symptoms.²³ Over half of the participants (~ 57%) reported that they had symptoms when their blood pressure was elevated. Symptoms included dizziness, being lightheaded, having a stiff neck, headache, changes in vision, nosebleed, feeling tired, and/or feeling nauseated. The symptoms that were most commonly cited were dizziness and light-headedness. The majority of participants (~ 59%) reported having three or more symptoms.

Quantitative behavioral indicators included frequency of blood pressure checks, medication adherence, and medical follow-up. Thirty-eight percent (*n*=8) of participants checked their blood pressure once a month, 24% (*n*=5) checked their blood pressure

Table 2. Biological health history information of participants (N=25)

Characteristics	N	%
Known hypertension		
<1 month	1	4
1–6 months	1	4
7–11 months	1	4
2–5 years	7	29
>5 years	14	58
Last time cholesterol checked		
Less than a month	9	39
1–6 months	5	22
1 year	5	22
2–5 years	1	4
Never	3	13
Told have high cholesterol		
Yes	12	52
No	11	48
Told have diabetes		
Yes	5	22
No	18	78
Smoke		
Yes	4	17
No	19	83
Personal history of heart attack or stroke		
Yes	2	10
No	18	90

Note. The total percentages for each item may range from less than/greater than 100% due to rounding and/or missing participant responses.

twice a week, 14% (*n*=3) checked their blood pressure every day, 14% (*n*=3) checked their blood pressure twice a month, and 10% (*n*=2) never checked their blood pressure. Eighty-seven percent (*n*=20) of participants responded that they take medication for hypertension, and 78% (*n*=18) took their medication as prescribed. Forty percent of participants reported at least one of these reasons for not taking their medication: costs too much, side effects, forget to take it, do not believe in the medicines, and/or use take-home remedies. Seventy-seven percent (*n*=17) of participants responded that they made regular visits to the doctor or a nurse practitioner, and 70% (*n*=16) responded that they saw a healthcare provider regarding their blood pressure within the month before the study. Qualitative data revealed that six of the seven groups

Table 3. Family health history information of participants (N=25)

Characteristics	N	%
Family history of heart disease		
Yes	18	75
No	6	25
Relative with heart disease		
No family	6	27
At least one primary relative	12	55
At least two primary relatives	3	14
At least three primary relatives	1	5
Family history of hypertension		
Yes	22	88
No	3	12
Relative with hypertension		
No family	3	13
At least one primary relative	7	29
At least two primary relatives	10	42
At least three primary relatives	4	17
Family history of heart attack or stroke		
Yes	20	80
No	5	20
Relative with heart attack or stroke		
No family	8	32
At least one primary relative	10	40
At least two primary relatives	5	20
At least three primary relatives	2	8

Note. The total percentages for each item may range from less than/greater than 100% due to rounding and/or missing participant responses.

used home remedies and/or alternative treatments such as vinegar, garlic, herbs, lemon juice, garlic pills, cider vinegar, mustard, Epsom salt, and vinegar water.

Perceptions of environmental factors

Six groups responded that there were physical activity facilities in their area, such as walking paths or fitness centers. Group participants walked outside or in the mall. Some areas in the community were viewed as safe and well-lit, while others were not.

Four groups responded that health-care facilities were accessible, and six groups reported that it was easy to get an appointment with their doctors. Factors affecting the ability to get an appointment or the ease of getting an appointment were the day of the week and if the person had money or insurance. Lack of transportation was a factor in keeping their appointment.

For the most part, groups felt that the respect they received from healthcare providers at the clinic was contingent on whether or not they had health insurance or money to pay for services. The majority of groups had blood pressure monitors in their homes, and blood pressure monitors were available at grocery stores, doctors' offices, and Wal-Mart. While all groups reported that there were no church health programs, the groups did report that some churches had nurses on duty, held health fairs once a year and offered blood pressure and cholesterol screening. Other comments included that there were rural clinics, but the blood pressure program did not provide medications as they used to prior to December 2003.⁹ It only provided informational materials.

Three groups mentioned that grocery stores were not far away from where they lived and were accessible. In

addition to grocery stores, a flea market where they could purchase fruits and vegetables was mentioned by three groups. Three groups mentioned that people still grew their own fruits and vegetables.

Social environment

Perceptions of what the participants' family and/or friends thought about hypertension and how they felt about the disease varied, as did the level and type of support. Perceptions ranged among viewing hypertension as a common cause of stroke, as "something that gone kill you if you don't take care of it," and as something caused by eating too much pork, salt, or fatty foods. On the other hand, there were also comments that their friends or family did not think it was serious and did not pay attention to it. One participant commented, "But it all fall back on the lack of knowledge of the disease blood pressure. Some of 'em don't understand the seriousness of it. And it's nothing you can really tell them to get it over to them."

Within each of the groups, some of the participants stated that family and friends were supportive; however, some participants stated that family and friends were non-supportive. Four groups responded that their family or friends encouraged them to eat healthy food and reminded them to take their medication. Four of the groups responded that their family and friends cooked foods or offered foods to them that they should not eat and encouraged them to try the foods.

DISCUSSION

This was the first known study in this geographical area to focus on hypertensive, Southern, rural African American women's perceptions of personal and/or environmental factors affecting hypertension. The women in the TCs viewed hypertension as a serious,

life-threatening disease similar to other literature describing African Americans' views of hypertension.^{10-12,29} Unlike findings from Brown and Segal,^{10,11} the women were generally unaware that blindness and kidney disease were complications of hypertension and that diabetes was a comorbidity. Even though they mentioned the importance of diet and exercise for hypertension management, it appears that their knowledge about complications of hypertension is limited. In a similar vein, their low level of cholesterol checks (39%) suggests that they may not be as aware of the significance of cholesterol to the development of hypertension.

A major barrier to following the treatment plan and/or a healthy lifestyle was income and/or lack of insurance. Webb and Gonzalez²⁹ noted that communication between the healthcare provider and client may be enhanced by the healthcare provider becoming more aware of issues that affect the client, such as financial stress. In addition, most women were not necessarily in a social environment that supported healthy behaviors. The women were still expected to cook large, highly seasoned meals that are traditional among African American families in southern America. The women discussed not wanting to cook separate meals for themselves and their families. Lack of knowledge may hinder some relatives from being supportive. Similar to findings in a study by James,³⁰ diet changes were not usually supported by family and friends, and health beliefs and behaviors regarding food were affected by the community, family and friends.

A major barrier to following the treatment plan and/or a healthy lifestyle was income and/or lack of insurance.

Regarding environmental factors, women stated that not all areas of the community and sidewalks were well-lit, limiting their walking exercise opportunities after work hours. Lack of convenient public transportation near their residences was another environmental barrier for them to get access to healthcare facilities for their hypertension management. Since individual zip codes of the participants residences were not obtained, investigators were unable to verify their statements. However, judging from their overall community areas, their statements seem in line with reality.

While knowledge may play an important role in adherence behavior to the treatment regimen for hypertension, it alone does not guarantee compliant behavior.^{31,32} Hypertension management and treatment require more than personal/individual efforts. This study clearly showed that environment, including social environment, plays a key role and suggests a need for including family, relatives, and the community at-large in education and behavioral change interventions for hypertensives.

Limitations

Limitations included the use of a small, purposive sample from churches, therefore limiting the transferability to the study population: rural African-American women in the community. This limitation may be mitigated somewhat by the fact that the majority of residents in this community were church attendants. The small sample size affected the ability to make comparisons between participants based on age; such analyses could be helpful in providing implications for intervention development. Another limitation concerns BMI that was estimated. Actual available environmental resources were not assessed; however, the focus of the study was on perceptions of the environmental factors. In addition, health behaviors may be affected by being a

member of a religious organization, which may serve as a system of social support.^{33,34} However, this limitation needs to be interpreted within the context of the participants who resided in the community.

Conclusion

The results suggest that personal and environmental factors affect these women's hypertensive status. Furthermore, interactions of these two factors observed in the TCs further strengthen the importance of these factors in understanding hypertension for this population. The findings of this study provide a foundation for the use of the modified version of the ecological framework that incorporates relevant concepts from the Health Belief Model. This framework may be used to systematically explore various roles of the women in relation to work, family, and community responsibilities and specific stressors, particularly since the level and type of support for persons with hypertension within the social environment were mixed.

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