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Attitudes, knowledge and self-efficacy of mammography procedures among African American women: A qualitative analysis

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Abstract:

Overall use of mammography has increased over decades, yet minority women consistently have lower screening rates compared to their White peers. Female breast cancer is the most commonly diagnosed cancer in North Carolina. It also accounts for the second largest number of cancer-related deaths among women. Thirteen African American women residing in North Carolina shared their views generated in open-ended questions, which were conveyed within data collection guides. Researchers utilized a qualitative approach conducted around breast health and mammogram usage at the interpersonal level and formulated by Social Cognitive Theory (SCT). Interviews were used to develop an understanding of this group's attitudes, knowledge, and confidence related to adhering to mammography guidelines. Data analysis revealed a consensus on the importance of early detection and high levels of confidence to adhere to the guidelines and knowledge of the recommended intervals. Some interviewees were more knowledgeable than others; however, family history and breast changes were the common themes. On average, participants had high levels of behavioral capability and self-efficacy of breast health behaviors. This suggests that further research should seek to better understand the influence of primary care physicians on the decision to obtain regular mammograms in an effort to explain the health disparity.

Key words: African Americans; Attitudes; Breast cancer; Mammogram; Self-efficacy

Introduction

There have been disproportionate rates of death attributed to breast cancer from ethnic minority groups [1]. African American women experience a higher mortality rate and a lower survival rate than their non-Hispanic White peers with comparable age and cancer stage. The five-year survival rate for breast cancer in African American women is 63%, opposed to 78% for Whites [1]. Forty-seven percent of all African American women diagnosed with invasive breast cancer will die from the disease within 10 years [2]. Female breast cancer is the most commonly diagnosed cancer in North Carolina and accounts for the second largest number of cancer-related deaths among women [3]. The age-adjusted breast cancer incidence rate for White women in North Carolina is higher than the rate for African American women. However, the age-adjusted breast cancer mortality rate for African American women is higher than the rate for White women (see Table 1) [3]. Much of this difference is due to African American women being substantially more likely than White women to have breast cancer diagnosed at the regional or distant stage, increasing their risk of subsequent death [3].

Due to African Americans having a lower incidence rate of breast cancer compared to White females, yet they experience higher mortality, this is an important area to expand and explore. Being diagnosed with breast cancer at a later stage is behind the significant mortality differences, as well as lower rate of mammography usage [4].

Table 1: Breast Cancer Incidence and Death Rates for African American Women and White Women in North Carolina, 2006-2010

	Incidence		Mortality	
Race	**Number of Cases**	**Rate (per 100,000)**	**Number of Deaths**	**Rate (per 100,00)**
African American	7,693	154.5	1,558	30.7
White	31,626	158.2	4,583	21.7

The key to surviving the disease is early detection and treatment. Annual mammography and annual clinical breast examinations (CBEs) are recommended for women aged 40 years and older; a CBE is required every one to three years for women younger than 40 years of age. In addition, monthly breast self-exams (BSEs) are recommended for all women. These activities act as secondary prevention and early detection methods of breast cancer [1]. Historically, African American women were less likely than White women to get regular mammograms. However, recently it has been reported that African American women and White women now have the same rate of mammography use. In 2008, 68 percent of African American women and 68 percent of White women had a mammogram within the past two years [5]. Health care professionals must take the necessary steps to ensure that this trend continues among racial/ethnic groups.

Purpose of Research

Risk behaviors are described as actions an individual takes that can increase the likelihood of mortality and morbidity [6]. Health professionals have an obligation to perform community capacity-building, which focuses on prevention rather than tertiary diagnosis/treatment, to curtail health concerns, thus reducing these risks. By taking action within this approach, many of the health disparities can be minimized or, with much diligence, eliminated. Another key factor is the use of a multi-level approach to interventions, which explores not only the individual's perceptions of adherence, but also the effects of interactions of family and friends on adherence. The goal is not only to have participants adhere to mammography recommendations, but also to incorporate the activity into their daily lives, to make permanent, life-long, positive behavior changes. In order to effectively evaluate these constructs, a qualitative research approach was employed to access attitudes, beliefs, and knowledge of the subject matter. It has been noted that identifying attitudes, beliefs, and issues that influence women in this group is crucial in developing interventions that may change their behavior and the behavior of those practicing mammogram services and referral practices [7]. Both will be valuable in developing future interventions that will increase screening among the target population.

Methods

Researchers of the qualitative, exploratory study conducted in-depth personal interviews to assess knowledge, opinions, and attitudes about mammography screening. Questions were guided by the Social Cognitive Theory (SCT). SCT illustrates a dynamic, ongoing process in which personal factors, environmental factors, and human behavior simultaneously influence each other. There are various concepts incorporated into this theory, which are reciprocal determinism, behavioral capability, expectations, self-efficacy, observational learning, and reinforcement [8].

Within a qualitative approach, data collection, analysis, and interpretations are derived from the observed data and not a predetermined hypothesis. Semi-structured interview questions were developed to assist with an informal data collection tool to allow informants the expression of their views and utilization of their own terms. Data collection and analysis occurred concurrently for all participants in an effort to conceptualize the emerged themes. This research was exempt from Institutional Review Board (IRB) process, due to it being a graduate course assignment completed for evaluation skill development purposes.

Data Collection Guide

- What are the recommended mammography intervals for your age group?
- What are some recognized risk factors for developing breast cancer?
- What are your thoughts on early detection?
- What, if any, are some of the mammogram health services available in your community?
- What is your level of confidence regarding adherence to mammography guidelines?
- If your health care provider did not recommend a mammogram to you during a routine physical exam and you were overdue, what would be your reaction?
- What actions can you employ to overcome personal barriers to adhering to mammography guidelines?

Participants

A small pool of 13 African American women, 46 to 60 years of age and from varying educational and socio-economic levels, was recruited from the state of North Carolina. All women had at least a high-school diploma, many had advanced degrees, and the participants were from low-, mid-, and high-income levels (see Table 2). The research was introduced to the women by word-of-mouth throughout the community, including religious venues, by key informants and random solicitation.

Table 2: Sample Characteristics

Characteristics	Results (n = 13)
Race	
African American	13
Age	
46 to 49	6
50 to 53	2
54 to 57	3
58 to 60	2
Level of Education	
High School	5
Associate Degree	1
Undergraduate Degree	4
Graduate Degree	3
Marital Status	
Single/Never Married	3
Married	8
Divorced	2

Data Collection and Analysis

The interview guide included a series of semi-structured, open-ended questions about mammography guidelines and practices, knowledge, and confidence in adherence conducted between March and April of 2010. After the initial interview, the guide was minimally modified with a reduction of medical verbiage to address the health terminology literacy of the participants. This enabled the moderator to obtain data without the need to explain terms used, which may develop bias. The moderator was a woman of the same racial/ethnic background as the interviewees. During the interview process, in an effort to convey correct information during compilation, all answers were noted verbatim within the data analysis tools and then transcribed into a Microsoft Word document. Also, participants were given an option of obtaining the questions, personal responses, and manuscript electronically for their records (e.g., member checks). The data was further triangulated by utilizing reflexive journaling, peer debriefing memos, and an audit trail in an effort to test the working hypothesis. Member checks were conducted to allow informants to test categories, interpretations, and conclusions for accuracy. Researchers' reflexive journaling enabled support of trustworthiness with a diary documenting the schedules and logistics. Peer debriefing by a professional outside of the context, but with a general understanding, assisted with analysis of the material, as well as the emerging themes. Audit trails were developed with raw data from handwritten notes in the form of memos before the transcription.

Results

Thirteen adult African American females participated in this study and have a median age of 51 years and; range of 46 to 60 years. All participants resided throughout the state of North Carolina and reported having at least one mammography screening in their lifetime. The primary investigator and an independent evaluator reviewed the transcribed documents to identify emerging themes and constructs. Certain themes were supported by literature, which explained that knowledge positively correlates with health actions and intent.

Behavioral Capability

All women were aware of the recommended mammography intervals and age group. One participant further stated that the screening should be reevaluated to consider younger individuals with high family risks. There was an array of responses to recognized risk factors for developing the disease; however, family history and breast changes (e.g., discharge, lumps) were more prominent. Others included hormone replacement therapy, menstrual cycle, alcohol use, age, cigarette smoking, birth control pills, and gender (see Table 3). Early detection was summarized by many participants as the best way to survive and treat breast cancer in the primary stage of development, resulting in a "shorter period of treatment" and "allowing for a better mental state" The interviewees all reside in a metropolitan area, and their responses to the availability of mammogram health services reflect their location. These resources included primary care physician, local church ministries, women's centers, radiology centers, Health Departments, hospitals, mobile units, and breast centers (see Table 3).

Table 3: Thematic Analyses of Key Constructs

Emergent Themes	Selected Quotes Illustrating Emergent Themes
Risk Factors	"If your mother or sister has been diagnosed with breast cancer."
Risk Factors	"…lumps, age, gender, family history, genes, menstrual cycle, alcohol use, hormone replacement therapy."
Risk Factors	"If you have a detected lump in your breast."
Thoughts on Early Detection	"Early detection greatly improves the chance for treatment and survival…"
Recommended Mammogram Intervals	"Women over the age of 40 should get a mammogram done annual."
Level of Confidence in Adhering to Guidelines	"I am confident with mammograms along with conducting self-examinations each month."
Level of Confidence to Adhering to Guidelines	"Because I am not in the medical field, my confidence level is questionable at best. What may appear to me as a lump or mass may be crucial but to them normal."
Actions to Overcome Personal Barriers	"Women have to educate themselves on everything having to do with mammography guidelines…"
Actions to Overcome Personal Barriers	"Learning about early detection has made me comfortable with mammograms and knowing that finding out is better than not knowing."
If Health Care Provider Failed to Recommend Screening	"I would ask if he thought it was needed. If he did not think so, I'd let him know I want a yearly mammogram."
If Health Care Provider Failed to Recommend Screening	"…I would ask questions as to why it was not suggested."
Mammogram Services Available in Community	"There are free screenings throughout the community and mobile screening units that travel from community to community. Hospitals and women's clinics also perform mammographies."
Mammogram Services Available in Community	"All of the major hospitals have a breast care center in my area…"

Self-Efficacy

The respondents felt confident in their ability to adhere to the recommended guidelines, with levels spanning from verbiage such as "committed" to "extremely confident." When asked about reaction to a physician who failed to recommend or conduct a due mammogram, most respondents stated that they would intervene (see Table 3). Many noted they would bring it to health professionals' attention, search for a new provider, question the absence of information, and/or request a screening order. The common themes presented around interviewees' personal barriers were consistent. The majority felt that educating yourself about breast cancer and screening was most effective in overcoming personal barriers (see Table 3). Making it a priority, consistent scheduling, reducing risk factors, being proactive, as well as administering BSEs, were conveyed numerous times. One respondent expanded further on the question by stating that women should have open conversations with peers and family members with history of breast cancer in order to increase their capacity of the subject.

Discussion

African American women have a lower incidence rate of breast cancer compared to their White counterparts, yet have higher mortality rates, making this is an important area to expand and explore [4]. There is a broad set of factors hindering individuals within these communities from adhering to guidelines. Research about the community and interpersonal factors that influence their decisions to have routine examinations must be conducted.

This study found that participants had high levels of behavioral capability and self-efficacy of breast health behaviors. This suggests that further research should seek to better understand the influence of health care providers on the decision to obtain regular mammograms. Minority and low-income women's interaction with physicians and nurses play an important role in them having initial and repeat mammograms [9]. Having medical professionals stress the importance of the procedure will mold behavioral outcomes of the patient. Relationships between the individual, medical staff and social environment all play key roles in minimizing the health disparity gap.

As executed in this research, identifying the attitudes, beliefs, and issues that influence women in this group is important in developing effective interventions that may change their behavior, resulting in improved health and well-being. Identifying influential attitudes, beliefs, and issues of women in this group are crucial in developing interventions for their behavior modification

and the behavior of those implementing mammogram services and referrals [7]. Both will be valuable in developing future interventions that will increase screening among the target population.

Subsequently, intervention strategies must be developed to influence providers, family members, the broader community, and health care policy to increase both the motivation for screening and access to screening services [9]. Additional research is needed to improve understanding of the perception of breast cancer risk, fatalistic beliefs, and family/partner influence on decision-making activities. More investigation should be conducted into the correlation of high awareness, knowledge about risk factors, warning signs and screening, trust of health care professionals, and empowerment by family and friends on mammography adherence [10].

Another area that can be explored in intervention implementation within health care settings is the usage of lay health advisors--including peer volunteers, peer educators, and lay community workers--to assist with penetrating the target population. [4]. This concept has been used widely as an underlying construct, but never the sole purpose of evaluation. As noted earlier, having an interviewer the same race/ethnicity as the informants may have aided in the participants' comfort and freedom of expression during data collection.

Health care providers must understand the impact of individual life experiences to dissolve barriers. Discussing personal behaviors allows women the freedom to evaluate their own beliefs about breast health [11]. Rather than adhering to recommended mammogram schedules because they were told to do so by a physician, they have the capacity to make an informed choice, knowing that the pros outweigh the cons. Thus, increasing the ability of the population to make positive, life-long health behavior decisions.

As the study results illustrate, the participants were knowledgeable about mammography guidelines. This leads researchers to conceptualize reasons that behavioral action is not executed across the target population, as described by historical trends. Recently, a study was conducted focusing on breast cancer screening and mammography completion among older minority women. With the elimination of financial and insurance barriers, mammography rates were low among the population. This suggests the need for health care providers to urge their patients to adhere, increasing the likelihood of them engaging in regular screening [12].

Limitations

Generally, qualitative samples are small, purposive, and grounded in theory. However, with small samples, it is difficult to generalize the findings to the population as a whole. Researchers continued interviews until the data became saturated with similar responses, resulting in thirteen participants. Another limitation is the lack of implementation of focus groups. It would be interesting to evaluate the comparability of responses in a group setting, opposed to individually. This strategy will be utilized in the future as a follow-up tool.

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