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Factors Influencing Early Detection of Breast Cancer in African American Women

Tamrah Joy Parker
Gardner-Webb University

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FACTORS INFLUENCING EARLY DETECTION OF BREAST CANCER IN AFRICAN
AMERICAN WOMEN

by

Tamrah Joy Parker, RN, BSN

A thesis/project submitted to the faculty of
Gardner-Webb University School of Nursing
in partial fulfillment of the requirements for the
Degree of Master of Science in Nursing

Boiling Springs

2007

Submitted by:
Tamrah Joy Parker, RN, BSN

Approved by:
Janie M. Carlton, EdD, MN, BS

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Chapter I

Introduction

Despite the higher numbers of Caucasian women that were diagnosed with breast cancer in North Carolina, African American women had a 5 year death rate 1.5 times greater than Caucasian women (North Carolina Department of Health and Human Services [NCDHHS], 2006). African American women are more likely to have breast cancer diagnosed at a later stage than Caucasian women. Mammogram screening increases the chances of detecting breast cancer at an earlier stage, therefore increasing the prognosis for survival (NCDHHS, 2006). Health care providers including nurses, play a critical role in the education and promotion of healthy lifestyles. Factors such as socioeconomic status, education level, and the knowledge level related to breast cancer affect patients' health promoting behaviors and the overall outcomes.

Purpose and Target Population

The purpose of the study is to examine factors influencing early detection of breast cancer for African American women. The target population will include African American women 50 years of age and older who attend one of the participating local churches, and who have no prior or present history of breast cancer.

Social Significance

Breast cancer is the second leading cause of cancer- related deaths for American women (Centers for Disease Control and Prevention [CDC], 2004). In addition, minority women from all racial backgrounds continue to have a higher rate of health disparities related to breast cancer (2005, Mullins, Blatt, Gbarayo, Hur-WeinYang, and Baquet). In North Carolina, there were 26,259 breast cancer cases reported for Caucasian women and 5,470 reported for African American women from 1998 to 2002. However, the death rate for African American women

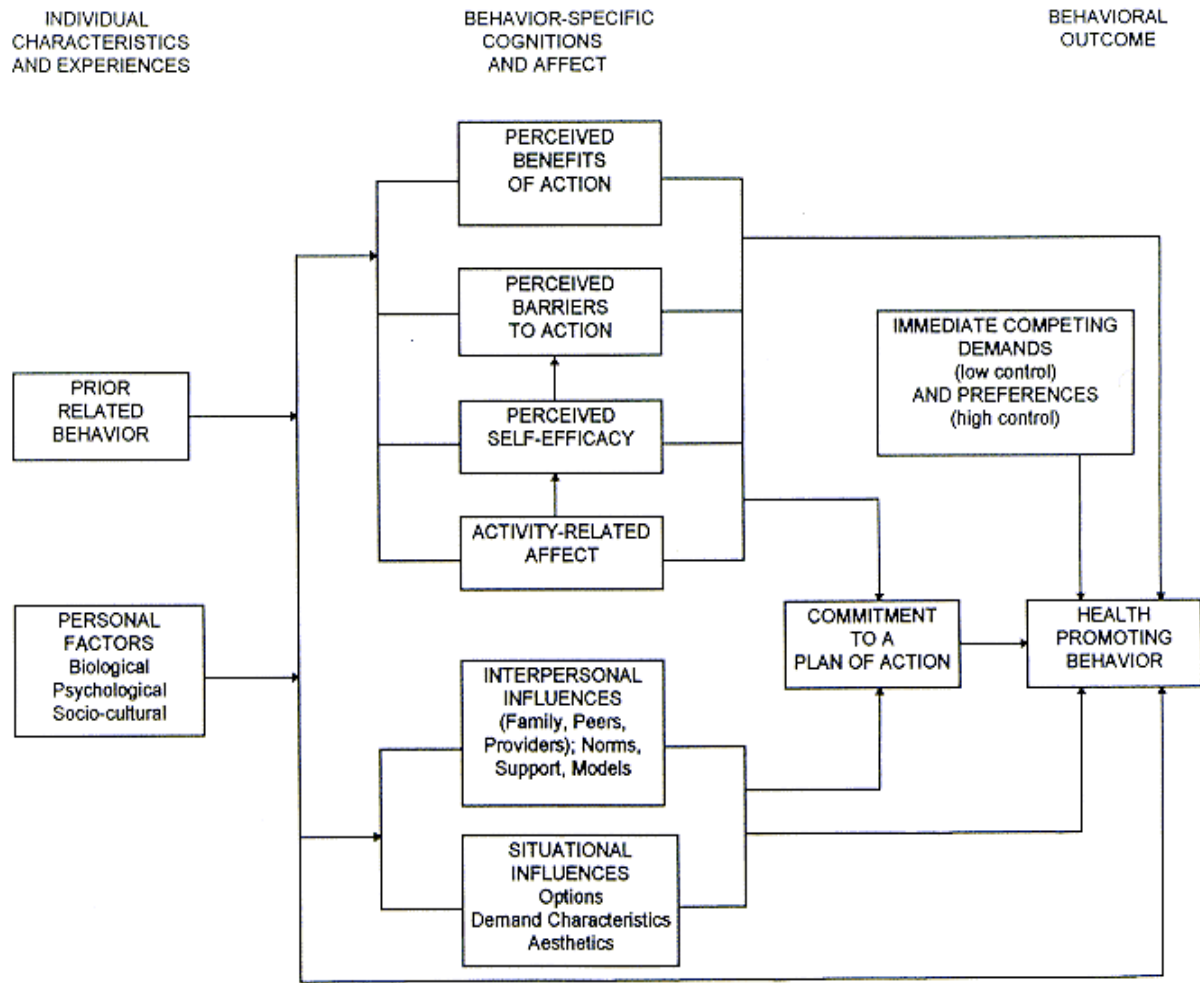
with breast cancer is 34.8% compared to 23.8% for Caucasian women (Department of Health and Human Services [DHHS], 2002). There are many factors that contribute to a higher mortality for African American women with breast cancer. Research has found that African American women are diagnosed with breast cancer at a later stage than Caucasian women. Fifty-nine percent of African American women are diagnosed with early stage breast cancer compared to 70% of Caucasian women (DHHS, 2004).

Theoretical Significance

Cultural factors influencing early detection of breast cancer such as biological characteristics and health promoting behaviors is not well documented in nursing literature. Scientific evidence has confirmed that mammography screening is the “gold standard”, or most efficacious method, for early detection of breast cancer in women aged 50 or older regardless of racial or ethnic group or socioeconomic status (Fowler, Rodney, Roberts, and Broadus, 2005). To improve African American women’s use of screening for early detection of breast cancer, further research is needed related to the role of cultural factors that influence early detection.

Conceptual Framework

This study of factors influencing early detection of breast cancer in African American women was guided by Pender’s Health Promotion Model. Pender’s Health Promotion Model was revised in 2002 from the original model of 1987. Figure 1 outlines Pender’s framework. The revised Health Promotion Model consists of three major concepts that are multidimensional. There are four concepts of Pender’s Health



Revised Health Promotion Model

Figure 1: Pender's Revised Health Model (Tomey, A., & Allgood, Martha. (2006). Nursing theorists and their work (6th ed.). St. Louis, Missouri: Mosby.

Promotion Model which include personal factors, perceived benefits to action, perceived barriers to action, and health-promoting behavior. These concepts include individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcome.

In this study of factors influencing early detection of breast cancer, Pender's concept "Personal factors" is represented by African American women's biological and sociocultural factors that influence their decision to undergo mammogram screening. The personal factors in this study consist of the biological factor of age and the sociocultural factors of household income, health insurance coverage, marital status, and employment status. Pender's concept of "Perceived benefits to action" is represented by the anticipated positive outcomes that will occur from health behavior. "Perceived barriers to action" is represented by anticipated, imagined, or real blocks and personal costs of undertaking a given behavior. "Perceived benefits to action" and "Perceived barriers to action" are measured by the responses to the questions on the Benefits and Barriers Scale to Mammogram Screening. Pender's concept of "Health promoting behavior" is represented by the women that receive breast cancer mammography screening as recommended. Pender's health promoting behavior concept will be measured by the Benefits and Barriers Scale to Mammogram Screening.

Chapter II

Review of Relevant Literature

Breast Cancer and Mammography

Breast cancer is a malignant tumor that starts from cells of the breast. A malignant tumor is a group of cancer cells that may invade surrounding tissues or spread (metastasize) to distant areas of the body (American Cancer Society, 2007). Mammography is a low dose x-ray system used to examine the breast. A mammography exam, called a mammogram, is used to aid in the diagnosis of breast diseases. X-rays are a form of radiation like light or radio waves that pass through most objects, including the body. Once it is carefully aimed at the part of the body being examined, an x-ray machine produces a small burst of radiation that passes through the body, recording an image on photographic film or a special image recording plate. Mammography screening with x-rays is the oldest form of imaging. New enhancements to mammography include digital mammography and computer-aided detection (CAD).

While mammography is the best screening tool for breast cancer available today, mammograms do not detect all breast cancers. Also, a small portion of mammograms indicate cancer is present when it is not (false-positive result). Research is being done on a variety of breast imaging techniques that can contribute to the early detection of breast cancer and improve the precision in distinguishing non-cancerous breast conditions from breast cancers (Lowdermilk and Perry, 2004).

Knowledge

Consedine, Magai, Spiller, Negut, and Conway studied breast cancer beliefs and knowledge deficits among African and Caribbean subpopulations. A total of 1364 subjects residing in Brooklyn, New York, aged 50-70 years of age were included in the study throughout

a two and half year period of data collection lasting from 2000-2002. The subjects were recruited through the use of a stratified cluster sampling. Ninety minute face-to-face interviews were conducted at various locations. Beliefs about cancer and risk factors for breast cancer are two of the major variables that were measured. The results showed the women believed that bruises or a sore on the breast can cause breast cancer, chemicals in food causes breast cancer, God determined the course of cancer, and that surgery can cause cancer to spread. Concerning the knowledge level of the subjects there was an overall greater level of knowledge for the women about the contribution of family history with the exception of African Americans. There was also a lack of knowledge of the Dominican women related to the role of alcohol, obesity, age of first birth, early menarche, and late menopause.

A study by Estape, T., Estape J., Grou, and Ferrer (2003) studied the level of knowledge about cancer, specifically breast cancer, in Spanish females living in Spain. The Spanish women in the study represented low-socioeconomic groups that were participating in literacy schemes. All of the subjects were married with a median of two children, a mean age of 43.8 years, and a total family income of less than 10,000 euros per year. A total of 541 women were given the questionnaire that focused on the issues such as access to screening, knowledge about cancer risk, and diagnosis and prognosis. A questionnaire adapted from Carpenter and Colwell (1995) was developed for the study. A total of sixteen items were assessed through the questionnaire and four items were specially related to breast cancer. Volunteers and social workers were trained to assist the subjects with the completion of the study. Results of the study found that 66% of the subjects agreed with the statement “I feel that I have no control over getting cancer.” Also, older women (defined as above 43 years old) were more likely to believe that they had a lack of control over getting cancer compared with the younger subjects. Fifty-eight percent

believed that cancer is a disease that can be cured, twenty-six percent believed that cancer is contagious, and 69% agreed with the statement that smoking and alcohol can cause cancer. With the questions specially related to breast cancer, the subjects' responses were that 41% believed that breast cancer is inherited, 49% believed that it could be prevented, 14% believed that breast cancer can be caused by breast-feeding. Only 46% of the women stated that they felt confident enough to perform self-exams well enough to find a lump. Furthermore, 82% of the women agreed that when a woman is 45 years old mammograms are appropriate once every two or three years. Overall, study results indicate that there is a lack of knowledge and that the negative perceptions that exist deter women from receiving mammograms as recommended.

Grindel, Brown, Caplan, and Blumenthal (2004) conducted an experimental design study to determine the effect of three types of breast cancer screening messages on knowledge, attitudes, perceived risk for breast cancer, and mammography screening in African American women. The research was conducted in three rural counties in Georgia with a total of 450 subjects aged 45-65 years old who had not received a mammogram in the last twelve months. The women completed a pretest that examined knowledge and attitudes related to breast cancer, and women in one of the three counties completed a 60-minute breast health intervention sessions. The different sessions included a positive, neutral, or negative attitude about breast cancer. The main research variables were defined as knowledge, attitudes, and perceived risk for breast cancer. These variables were measured before the intervention, after the intervention, and again twelve months following the intervention. There were no significant differences discovered among the three groups.

Cultural Factors

Malley, Kerner, Johnson, and Mandelblatt (1999), investigated whether acculturation was associated with the receipt of clinical breast examinations and mammograms among Hispanic women in New York City. For this study, acculturation was defined as “the psychosocial adaptation of persons from their culture of origin to a new or host cultural environment” (American Journal of Public Health, pg. 219). The Hispanic population was divided into four subgroups of Puerto Rican, Dominican, Colombian, and Ecuadorian. This study was a division of a larger study that focused on minority populations with women aged 18 to 74 years old and lived in New York City. The data collection method used was a computer telephone survey that included 908 Hispanic women from a population-based quota sample between May to October 1992. The women that choose to participate in the study had the option to be interviewed in English or Spanish. The fundamental results of the study indicated that having higher acculturation, having a usual source of income, having higher income, having health insurance, immigrating to the United States before age 16 years, spending a greater proportion of one’s life in the United States, and the use of English for the telephone interview were all statistically significant associated with recent receipt of clinical breast exams and mammograms. The results of this study help to identify the variables that affect the rate of Hispanic women that receive mammograms and clinical breast examinations. These results have essential affects on the determination of community programs to offer to increase the rate of mammograms and clinical breast examinations.

Russell, Perkins, Zollinger, and Champion (2006) explored variations in cultural and health beliefs about mammogram screening among African American and Caucasian women. The objective of the descriptive, cross-sectional study was to identify which set of beliefs predicted mammography screening as recommended. The convenience sample included a total of

111 African American women and 64 Caucasian women aging from 40-97 years old (mean age 60.2 years) residing in Indianapolis, Indiana. Inclusion criteria for the study were non-Hispanic, African American or Caucasian, and aged 40 years or older with no history of breast cancer. The subjects were recruited from community organizations and public housing facilities. Telephone and face- to-face interviews were conducted. The research variables studied include race/ethnicity, education, income, personal space, health temporal orientation, personal control, fatalism, susceptibility, benefits, barriers, self-efficacy, and mammogram screening adherence. Results revealed that more African Americans than Caucasians were adherent to the American Cancer Society guidelines for mammograms (68% versus 61%). Participants having incomes of less than \$10,000 annually had a 62% mammogram screening rate; women with an income between \$10,000 -\$30,000 had a 66% adherent rate, and women with incomes greater than \$30,000 had a 70% adherent rate. One of the key points that this study recognized was that the health behavior models that are commonly used in the prediction of health behaviors lack theoretically based cultural concepts, therefore restricting the prediction of mammogram screening related to minority populations.

Demographics

Aldridge, Daniels, and Jukic examined the relationships between demographic, healthcare factors, and mammography use among the Hispanic populations in the 50 states and the District of Columbia. The data used in this study was collected from the 2002 Behavioral Risk Factor Surveillance System maintained by the Centers for Disease Control and Prevention. Several demographic factors were evaluated including age, marital status, number of children in household, level of education, employment status, and annual household income. The final sample for this study included 64,408 non-Hispanics and 1,737 Hispanics age 40 years and older.

There was no significant difference between non-Hispanic and Hispanic women when marital status, education level, and employment status were examined. Conversely, Hispanics tend to be younger, lack healthcare coverage, lack a regular physician, and have a lower household income than non-Hispanics. In conclusion, the overall screening rates among Hispanics and non-Hispanics did not vary significantly when adjustments were made for demographic and healthcare access factors. This study also further validates previous studies that suggest that age, employment, and income are more important factors in the prediction of receiving mammograms than ethnicity alone.

Murff, Byrne, Haas, Puopolo, and Brennan conducted a study to determine if there are differences in the collection of family history information based on patient race. The study included 1759 women without a prior history of breast cancer who had visited their primary care provider during the prior year. The data source was the Ambulatory Medicine Quality Improvement Project (AMQIP) that included 11 different sites located in the Boston area. The subjects' mean age was 47.6 years ranging from 20 to 75 years of age. Medical record reviews of the subjects were completed after consent was given. The purpose of the medical record reviews was to discover whether the women had a history of family breast cancer recorded; this factor served as the primary variable. The other independent variables studied included the subject's age and whether the subject had reported any complaints with their breast such as pain or a lump. The sample included 72% Caucasian (white), 13% African American, 12% Hispanic, and 4% as other. The primary result of the study rendered the information that only 15% of non-white subjects had documentation of a family breast cancer history in comparison to 32% of white subjects in the study. The results from this study offer more evidence on the importance of a

positive line of provider and patient communication to identify potential problems and provide optimum care to the patient.

Kaplan, Crane, Stewart, and Juarez-Reyes (2004) examined the factors affecting follow-up care among low-income women after identification of a breast abnormality. The study was implemented at two comprehensive health centers (CHC) and one public hospital in the Los Angeles area and included a total sample of 951 women. The data was collected during a six month recruitment period from January 1, 1994 to June 30, 1994. Radiology appointment logs were used to identify women that had an abnormal mammogram. Women whose breast abnormalities were identified at other facilities and women with a history of breast cancer were excluded from the study. The women were identified as low-income and represented many racial backgrounds. A questionnaire was developed using Andersen's Model of Health Care Utilization as a standard. The questionnaire was primarily prepared in English and then translated into Spanish. Approximately 12 months after the initial breast screening, women that were eligible were invited to participate in a survey. Data was collected during the months of November, 1994 and December, 1995 via telephone with a total of 535 women completing the telephone interview. After a 12 month period, follow-up information was compiled from the medical records from the clinics and the hospitals where the women were referred for follow-up care. Factors identified that influenced a woman's follow-up visit after being diagnosed with an abnormal mammogram included lack of health insurance, site where mammograms were received, distance or transportation issues, lack of knowledge, embarrassment issues, household responsibilities, patient-provider care, and patient satisfaction rates. Results of the study show that women who were referred for a six month mammogram follow-up waited for an average of 184 days, those women referred for a clinical breast exam waited for an average of 77.8 days and

the women referred for a procedure such as a biopsy or ultrasound waited for an average of 36.7 days. The results of this study can be used to better identify and understand why certain barriers exist to follow-up visit of low income women and address these issues in a culturally competent manner.

A study by Fowler, Rodney, Roberts, and Broadus (2005) examined the health interventions for African American women to increase the rate of mammography screening. There was collaboration among the Montgomery County and the Center for Healthy Communities (CHC) to train the community health advisors (CHA) and implement the interventions for the study. The CHA's completed a 10 week educational program through the CHC. In order to recruit subjects for the study the CHA's completed both phone calls and home visits at a variety of locations including community health centers, adult meals sites, low-income housing units, and a job center in Montgomery County, Ohio. The final sample consisted of 68 African American women of lower socioeconomic status who were 50 and older (median age of 57.8) and used health care services at local health departments. Inclusion criteria to participate in the interventions consisted of the following: no reports of mammography screening in the past two years, no prior medical history of breast cancer, no reported symptoms of breast cancer, total annual household income at or below 180% of the federal poverty level, resident of one of two inner-city communities in Montgomery County, and willingness to participate in all phases of the intervention. A pre and post 18-item self-administered test was developed that had a reliability level of $r=0.83$ and 0.87 . The program assessment revealed that 90% of the women reported that valuable information was learned about breast health and there was an increase with positive statements related to the breast health intervention. Furthermore, the scores on the post-intervention test in comparison to the pre-intervention test score showed an improvement in the

knowledge levels of the participants. The information obtained from the study can be of assistance for health care individuals to increase the rate of African American women that receive mammograms as recommended.

Research Utilizing Pender's Health Promotion Model

A study by Wilson (2005) studied health practices of sheltered homeless women. The purpose of this cross-sectional, descriptive, and non-experimental study was to gain insight into homeless and health practices of sheltered homeless women. The sample of this study included 137 women from five not-for-profit urban shelters located in the Midwest. The subjects' ages ranged from 18-60 years with a mean age of 36 years. Fifty-three percent of the subjects identified themselves as white, 43.8% of subjects identified themselves as African American, 1.5% of the subjects were Latina, and 1.5% of the subjects were Asian. Eighty percent of the subjects have been living at the shelter for four weeks or less at the time of data collection; forty-six percent of the women stated that relationship problems/conflicts was the major aspect that contributed to the homeless condition. Inclusion criteria for the study included registered residents of the shelters with the ability to read and understand English. Data were collected between the months of May through September. Weekly telephone calls were made to the subjects and meeting times held at the homeless shelter to provide methods of data collection. Sociodemographic and personal data of the participants were measured by the Personal History Form. The Health-Promoting Lifestyle Profile II (HPLP II) was used to identify patterns of self-initiated actions and perceptions that aid in maintaining or enhancing the level of wellness. Results of this study identified the barriers to health care, personal health status, location of primary health care, and physical disease. A total of 63.5% of the subjects identified money to be a barrier to health care, a public clinic was 37.2% of the subjects' location of health care, 46.7%

identified their health status as good, and 27% of the subjects reported asthma as one of their physical diseases. The HPLP II suggested the strongest positive relationship ($r=0.78$) between spiritual growth and interpersonal relationships. One limitation to this study is that the sample does not include a significant percent of Latina and Asian women. Therefore, the results of this study do not provide a strong representation of the health promoting behaviors of Latina and Asian sheltered homeless women. Another limitation to the study was a potential bias by subjects when reporting health related behaviors related to interpersonal support and spiritual growth. Also, a larger sample size could increase the ability to generalize results to other populations.

Martinelli (1999) performed a study to test an explanatory model of variables which can influence health promotion behaviors in smoking and non-smoking college students. Pender's Health Promotion Model was the framework of the study. The method of convenience sampling was used to gather data from undergraduate students at a private university in the mid-Atlantic region of the United States. The sample included students from all 50 states and 102 foreign countries, 5 racial backgrounds, and 15 religious groups. International students comprised 9% of the sample and represented 17 different countries. Participation in the study was completely voluntary and included 238 subjects of which 66% were female. The mean age of both males and females was 20 years. Forty-eight percent of the male subjects reported to be smokers, and 37% of the females reported to be smokers. Seventy-eight percent of the sample was white and 75% of subjects were Catholic. The method used to analyze the data was a self-administered questionnaire, a Environmental Tobacco Smoke (ETS) Avoidance Scale, the Multidimensional Health Locus of Control Scale (MHLC), the Self Efficacy Scale, and the Health Promotion Lifestyle Profile (HPLP-L). The questionnaire contained items to assess gender, smoking status,

and perceived health status, the ETS-Avoidance Scale measured the likeliness of avoiding tobacco smoke, MHLC measured the perceived control of health. The Self Efficacy Scale was a 30 item Likert-type scale and the HPLP-I measured Health Promotion Behaviors (HPB). Results of the study concluded that avoidance of ETS had both a strong direct and indirect influence on the performance of HPB and perceived health status had both direct and indirect effects on performance of HPB. Self-efficacy was the strongest predictor of the performance of HPB with 48% of the prediction of HPB contributed to self efficacy scores. The study also revealed that females were more likely to be concerned than males with matters of health and external control of health directly influenced performance of HPB. One limitation to this study was the use of a convenience sampling. The use of convenience sampling was a limitation because there is a lack of accuracy, and the probability of inclusion in the sample is unknown. Another limitation was the lack of a power analysis performed to determine an appropriate sample size.

Phillips, Palmer, Wettig, and Fenwick (2000) studied attitudes towards nurse practitioners (NP). The purpose of this study was to measure relationships between gender, age, ethnicity, education, income level, and an individual's attitude towards using a NP for health care. A convenience sampling method was used to collect all information for the demographics and the Attitude Survey Likert-type scale. The sample included 238 subjects in one of the four sites in southeastern Pennsylvania County. A total of 79.8% of the sample were high school graduates, 69.3% of subjects reported no additional education after high school with a mean age of 48.5 years. Fifty-eight percent were females, 69.4% were Caucasian, 66% of subjects reported family incomes of \$40,000 or less, and 57.5% reported that they have never seen a NP for health care. Ten questions based on a Likert-type Attitude Survey were used to analyze the data collected. The results included that there were no significant difference on the basis of gender

and race, but results showed that high school graduates demonstrated significantly more positive attitudes towards NPs than non-high school graduates. Other results were that older subjects and those with lower incomes were less positively inclined to use NP services. A limitation with this study was that 69.4% of the sample included Caucasians. This population may not be a true reflection of other ethnicities and races. Another limitation was the use of convenience sampling. Also a larger sample would decrease the rate of error.

As can be seen in the review of literature, Nola Pender's Health Promotion Model has been used in a variety of studies. Also, studies involving minorities has provided general information that can be utilized by health care professionals. However, additional research is needed to further understand what factors influenced people of various cultures/ethnic backgrounds to engage in a health promoting activity. This particular study seeks to identify the barriers and benefits of a health promoting behavior, specifically early detection of breast cancer among African American women.

Chapter III

Methods

Subjects, Sampling, Setting

This descriptive design study explored the perceived benefits and barriers to action that African American women have pertaining to mammogram screening. Women from two Baptist churches in Wake County, North Carolina were invited to participate in the study. A convenience sampling method was utilized. Sample eligibility included: (a) African American females 50 years of age or older (b) ability to read and write in English (c) no prior or present diagnosis of breast cancer.

Table 1 highlights the demographic characteristics of the sample. The subjects consisted of 39 African American women ranging in age from 50-97 years, with a mean age of 64.9 years and a standard deviation of 8.9 years. The mode age was 67 years and the medium age was 64.5 years. A large majority (80%) of the women were married. There were also 67% of the participants that reported an employment status of retired. None of the subjects had annual household incomes less than \$15,000, 2% had incomes ranging from \$15,000 to 24,999, 41% had incomes ranging from \$25,000 to \$34,999, 33% had incomes ranging from \$35,000 to \$44,999, 10% had incomes ranging from \$45,000 to \$54,999. Only 13% of the participants reported having incomes greater than \$55,000 annually. Most of the participants (82%) had health insurance that contributes to the cost of a mammogram. The responses from the demographic data form indicated that a large majority of the participants receive mammograms as recommended (60%).

Table 1.

Sample Demographics

Characteristics	N	%
Race or ethnicity		
African American	39	100
Age (years)		
50-59	11	28
60-69	20	51
70-79	7	18
>80	1	2
Marital Status		
Married	31	80
Not Married	8	20
Employment		
Employed full-time	11	28
Employed part-time	2	5
Unemployed	0	0
Retired	26	67
Income (\$)		
<15,000	0	0
15,000-24,999	1	2
25,000-34,999	16	41
35,000-44,999	13	33
45,000-54,999	4	10
>55,000	5	13
Health Insurance Coverage		
Yes	32	82
No	4	10
Unsure	3	8

*Note: Because of rounding, percentages may not total 100.

Data Collection

The questionnaires were distributed after morning church service in the participating churches on three various Sundays. Participation was completely voluntary and all individuals that met inclusion criteria were invited to participate in the study. The consent form, demographics data form, and the “Perceived Benefits and Barriers Scale” was given to the participants. All documents were only offered in English. The participants were assured that the information they provided would remain confidential. They were also instructed not to write their name on the questionnaire or the demographic data form. Participants placed their completed forms in a collection box. The researcher was present during the time of data collection to clarify any questions. There was no form of financial or any other form of compensation for the subjects’ participation.

Instruments

Perceived benefits and barriers to mammogram screening were measured using Nola Pender’s “Perceived Benefits and Barriers Scale” (See Appendix A). The Perceived Benefits and Barriers Scale included twelve questions that each participant answered. This scale has four possible responses for each statement. The possible responses for each statement include “strongly agree”, “agree”, “disagree” and, “strongly disagree.” Each of the questions reflected either a benefit or barrier to mammogram screening. For questions 1, 3, 5, 6, 7, 8, 9, 10, 11, 12, if there was the response of “strongly agree” or “agree” to the question it was a reflection of a benefit to mammogram screening. Therefore, if there was the response of “disagree” or “strongly disagree” for those questions it was a reflection of a barrier to mammogram screening. For questions 2 and 4 if there was the response of “strongly agree” or “agree” it was a reflection of a barrier to mammogram screening and if there was the response of “disagree” or “strongly

disagree” it was a reflection of a benefit to mammogram screening. There is no information in the literature that provided reliability or validity data of this scale.

Permission to use the “Perceived Benefits and Barriers Scale” was obtained from Nola Pender (See Appendix B). The method of measurement was to analyze the subjects’ responses to the “Perceived Benefits and Barriers Scale” to mammogram screening. There was also a researcher prepared tool used to gather demographic data (See Appendix C). Data was imputed and analyzed by the researcher using SPSS. Descriptive statistics was used to determine percentages, means, median, and standard deviations for demographic data. Percentages were used in describing the results of the perceived benefits and barrier questionnaire.

Ethical Considerations

Prior to the study, approval was obtained from the Gardner-Webb University Institutional Review Board. The Pastor of each of the church congregations granted permission for the study. There were no risks identified with this study. Participation in the study required completing a consent form, questionnaire, and completing the demographic data form. A consent form describing the purpose and explaining the requirements for participation was obtained for each participant (See Appendix D).

Chapter IV

Results

Table 2 provides a frequency and percentage distribution to the responses for each of the twelve statements in the “Perceived Benefits and Barriers Scale.” Women that had health insurance coverage that contributes to the cost of a mammogram and felt that mammogram screening was convenient were more likely to be adherent to mammogram screening. One-hundred percent of the women between the ages of 50-59 reported that they felt mammogram screening was convenient and reported having health insurance that contributed to the cost of a mammogram. All of the women had health care providers that encouraged them to receive mammograms regularly. With the statement “I enjoy receiving a mammogram” 85% of the subjects disagreed and only 5% agreed with this statement and 87% of the subject reported that receiving a mammogram causes discomfort. In contrast, the statement “receiving a mammogram gives me a sense of personal accomplishment” 87% agreed with the statement. Fifty-four percent of the participants agreed with the statement that “I know the purpose of a mammogram. A graphical representation of these responses is shown in Figure 2. Eighty-five percent of the subjects agreed with the statement “my healthcare provider encourages me to receive mammograms.” According to the results of this study 100% of the women aged 50-59 years of age had health care providers that encouraged them to receive mammograms compared to 79% of the women in the other age groups. Figure three reflects a graphical distribution to statements #6, 10, 9, and 12. Sixty-two percent of the participants agreed with the statement “I believe that mammograms can detect breast cancer.”

Table 2.

Responses from Perceived Benefits and Barriers Scale to Mammography Screening

	Strongly Agree		Agree		Disagree		Strongly Disagree	
	N	%	N	%	N	%	N	%
1) I enjoy receiving a mammogram	0	0	2	5	33	85	4	10
2) Receiving a mammogram takes too much time	17	44	16	41	5	13	0	0
3) I know how often I should receive a mammogram	29	74	6	15	4	10	0	0
4) Receiving a mammogram causes discomfort	1	3	34	87	4	10	0	0
5) Receiving a mammogram gives me a sense of personal accomplishment	34	87	5	13	0	0	0	0
6) Receiving a mammogram is convenient	3	8	1	3	33	85	2	5
7) I know the purpose of a mammogram	0	0	21	54	10	26	8	21
8) I know where to go for a mammogram	0	0	19	49	18	46	2	5
9) I have health insurance that pays for mammograms	16	41	20	51	3	8	0	0
10) My health care provider encourages me to receive mammograms	33	85	5	13	1	3	0	0
11) I can detect breast cancer at a earlier stage by receiving regular mammograms	2	5	27	69	9	23	1	3
12) I believe that mammograms can detect breast cancer	7	18	24	62	8	21	0	0

*Note: Because of rounding, percentages may not total 100.

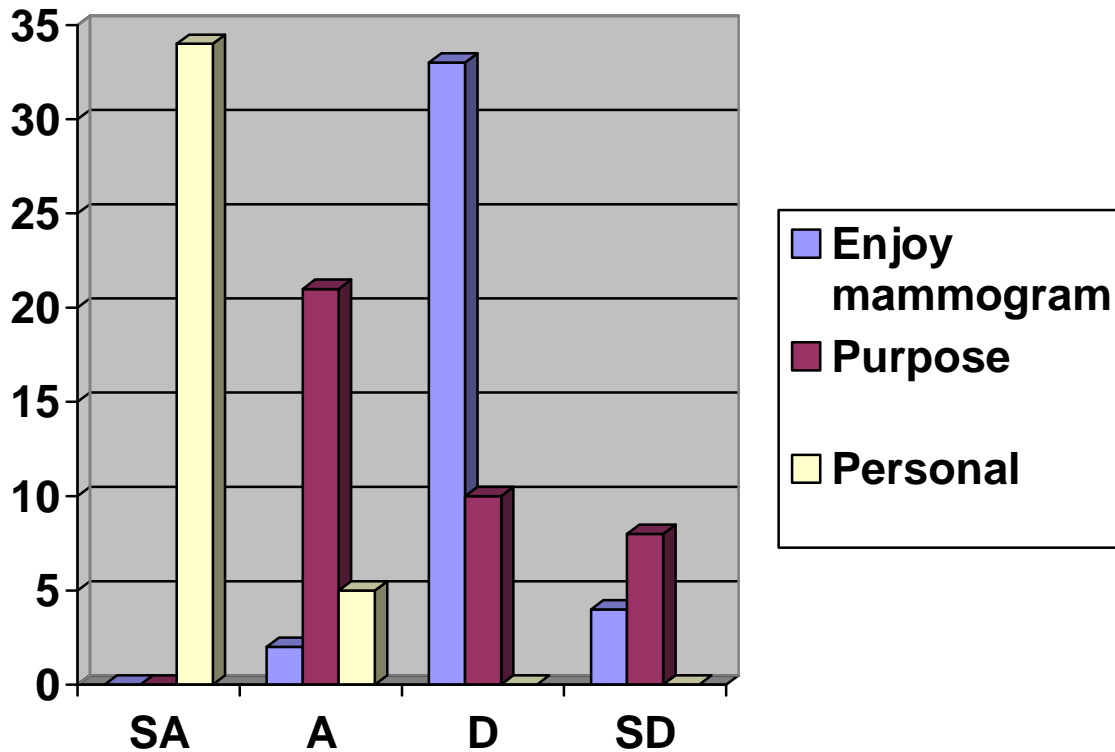


Figure 2. Percentage distribution of response to statements 1, 7, and 5.

-Enjoy Mammogram reflects responses from the statement “**I enjoying receiving a mammogram**”

-Purpose reflects responses from the statement “**I know the purpose of a mammogram**”

-Personal reflects responses from the statement “**Receiving a mammogram gives me a sense of personal accomplishment**”

SA = Strongly Agree

A = Agree

D = Disagree

SD = Strongly Disagree

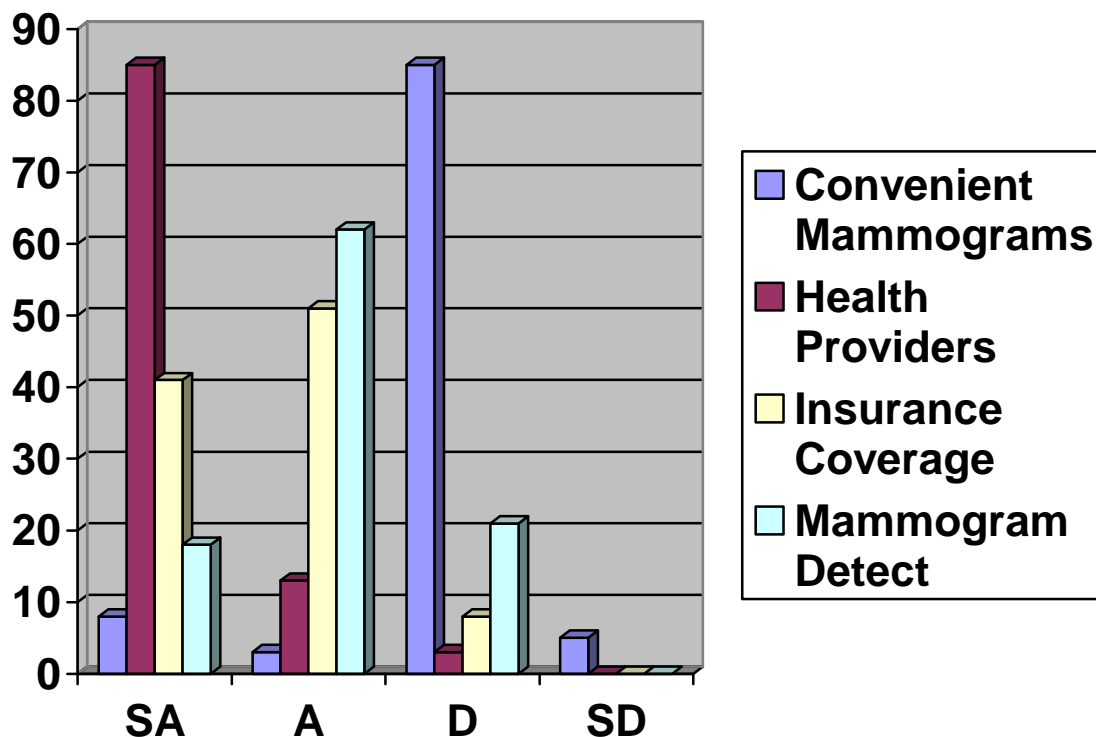


Figure 3. Percentage distribution of response to statements 6, 10, 9 and 12.

-Convenient Mammograms reflects responses from the statement “**Receiving a mammogram is convenient**”

- Health Providers reflects responses from the statement “**My health care provider encourages me to receive mammograms**”

-Insurance Coverage reflects responses from the statement “**I have health insurance that pays for mammograms**”

-Mammograms Detect reflects responses from the statement “**I believe that mammograms can detect breast cancer**”

SA = Strongly Agree

A = Agree

D = Disagree

SD = Strongly Disagree

Chapter V

Discussion

Implications Regarding Conceptual Framework

The results from this study based on Pender's Health Promotion Model indicate that perceived benefits and barriers to action can affect the individual's behavior. The perceived barriers to mammogram screening studied include the lack of convenience to receiving a mammogram, the discomfort experienced with a mammogram, lack of knowledge to where and when to have a mammogram, and how time consuming it is to receive a mammogram. Other perceived barriers and benefits to action examined in this study include if the subject enjoys receiving mammograms, if there is a sense of personal accomplishment with receiving a mammogram, if "my health care provider encourages me to receive a mammogram", if "I believe mammograms can detect breast cancer", and if "I believe a mammogram can detect breast cancer at an earlier stage." All of the women that disagreed with the statement "I believe mammograms can detect breast cancer", reported that they do not receive mammograms as recommended. This suggests that the lack of knowledge about mammography creates a barrier to the behavior of receiving a mammogram as recommended. Pender's Health Promotion Model can serve as a prominent component in the assessment, planning, implementation, and evaluation of health promotion programs that increase the rate of African American women that receive mammograms as recommended.

Limitations

Possible limitations to this study include the fact that the method of convenience sampling is utilized. This issue poses a weakness to the study design and also decreases the ability for the research results to be generalized to the entire population. Future investigators

should use a larger sample size that offers a greater representation of a variety of populations. Also the differences found among the age groups need further investigation from larger populations. Another critical limitation of this study is the lack of diversity of the sample that consisted only of African American women whom attend church in Wake County, North Carolina. Another limitation is that all data collected is self reported by the subjects. It would be beneficial if future studies provided data about adherence to mammogram screening from results gathered from medical records. Further research should also analyze correlations between the convenience of mammogram screening and the percentage of women that receive mammograms as recommended.

Implications for Nursing and Research

This study's results provide direction for future nursing practice and the research of nursing. A total of 60% of the sample reported that they received a mammogram as recommended by the America Cancer Society. According to the results of this study 100% of the women aged 50-59 years of age had health care providers that encouraged them to receive mammograms compared to 79% of other women in the other age groups. Health care providers must be educated and reminded of the importance of patient education regarding mammogram screening for all ages of women. Only 54% of the women reported that they knew the purpose of a mammogram, and 49% reported that they knew where to go to receive a mammogram, therefore further education is needed so that women are aware of the purpose of regular mammogram screening and knowledgeable of where to receive mammogram.

Many women continue to be diagnosed with breast cancer each year. Health care providers have a vital role in the education of African American women and breast cancer. The

results of this study and future studies will provide imperative information to the health care system that can improve the quality of care for all women.

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Appendix A.

Perceived Benefits and Barriers Scale to Mammography Screening

Directions: Below are statements that relate to ideas about mammography screening. Please indicate the degree to which you agree or disagree with the statements by **circling SA for strongly agree, A for agree, D for disagree, or SD for strongly disagree.**

Strongly Agree ←-----→ Strongly Disagree

1) I enjoy receiving a mammogram	SA	A	D	SD
2) Receiving a mammogram takes too much time	SA	A	D	SD
3) I know how often I should receive a mammogram	SA	A	D	SD
4) Receiving a mammogram causes discomfort	SA	A	D	SD
5) Receiving a mammogram gives me a sense of personal accomplishment	SA	A	D	SD
6) Receiving a mammogram is convenient	SA	A	D	SD
7) I know the purpose of a mammogram	SA	A	D	SD
8) I know where to go for a mammogram	SA	A	D	SD
9) I have health insurance that pays for mammograms	SA	A	D	SD
10) My health care provider encourages me to receive mammograms	SA	A	D	SD
11) I can detect breast cancer at a earlier stage by receiving regular mammograms	SA	A	D	SD
12) I believe that mammograms can detect breast cancer	SA	A	D	SD

*Questions for Perceived Benefits and Barriers Scale to Mammogram Screening guided by: Sechrist, K., Walker, S., & Pender, N. (1987). Exercise benefits and barriers scale. Retrieved August 29, 2007, from www.nursing.umich.edu/faculty/pender_nola

Appendix B.

Pender's Permission to use Scale

Tamrah:

You may use the tool (EBBS). Check my website for tool and related information.

www.nursing.umich.edu/faculty/pender_nola.html

Wishing You Good Health,

Nola Pender

Quoting tjp1214@bellsouth.net:

Dr. N. Pender,

I am a nursing graduate student planning to conduct a research project to examine factors influencing early detection of breast cancer for African American women. The conceptual framework for this study of cultural factors influencing early detection of breast cancer in African American women will be guided the Pender's Health Promotion Model revised in 2002. I am contacting you because I would like to utilize your Benefits and Barrier Scales as a tool for data collection. If you have any questions please feel free to contact me via email at tjp1214@bellsouth.net or via phone at (919) 219-8479.

Thank you for your assistance.

Tamrah Parker, RN, BSN

Appendix C.

Demographic Data Form

Study Title: **Factors Influencing Early Detection of Breast Cancer in African American Women**

Investigator: **Tamrah Parker RN, BSN**

Demographic Data Form

Please circle the correct answer.

- | | |
|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) Age | 50-59 yrs. old
60-69 yrs. old
70- 79 yrs. old
80 yrs. and older |
| 2) Martial Status | Not Married
Married |
| 3) Employment Status | Full-time
Part-time
Unemployed
Retired |
| 4) Yearly Household Income | Under \$15,000
Between \$15,000 and \$24,999
Between \$25,000 and \$34,999
Between \$35,000 and 44,999
Between \$45,000 and \$54,999
Greater than \$55,000 |
| 5) Health insurance that contributes to the cost of a mammogram | Yes
No
Unsure |
| 6) Do you receive mammograms as recommended? | Yes
No
Unsure |

Appendix D.

Consent Form

Study Title: Factors Influencing Early Detection of Breast Cancer in African American WomenInvestigator: **Tamrah Parker RN, BSN**

Ms. Tamrah Parker is a registered nurse researching factors influencing early detection of breast cancer in African American women. This study will provide vital information to the health care system that can improve the quality of care for women associated with receiving mammograms as recommended to detect breast cancer at early stages and increase the body of knowledge for the nursing profession.

The study and its procedures have been approved by the appropriate individuals and the institutional review board (IRB) at this health care facility and at Gardner-Webb University. There are no risks identified with this study and participation in the study requires 1) completing this consent form 2) completing a questionnaire and 3) completing a demographic data form. Participation in this study will take approximately 8-10 minutes to complete the questionnaire and demographic data.

Your participation in this study is 100% voluntary. At any time during this study you may withdraw from this study with no penalties. Your answers will be kept in strict confidentiality and no information will be disclosed to any other persons without your permission. All information will be collect by Tamrah Parker, stored in a safe area, and destroyed after data analyses are completed.

I understand that the results of this research will be available after December 10, 2007 and that Tamrah Parker, RN, BSN is the contact person if there are any questions pertaining to this study. Ms. Parker can be reached by phone at 919-219-8479 or by email at tjp1214@bellsouth.net.

I have read this consent form and voluntarily consent to participate in this study.

 Subject's Signature

 Date

I have explained this study to the above subject and they have verbalized complete understanding.

 Investigator's Signature

 Date