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Perceived barriers to breast cancer screening: A comparison of African American and Caucasian women

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Perceived Barriers to Breast Cancer Screening:
A Comparison of African American and Caucasian Women

by

Natalie E. Bastien

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science
Department of Health Science
College of Nursing
University of South Florida

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Dedication

I would like to give praise and thanks to God for always guiding me through life delicate and most difficult path. Thanks to my husband Sem Bastien for his commitment to always helping me achieve my goals. I also would like to thank my two sons Demarious and Colby, my mother and father Cassie and Wilfred Yarde for their dedicated support and encouragement. I want you all to know that I m very grateful of your devotions towards my academic achievement. Sem, thanks again for your understanding. Colby and Dee, I appreciate your patience. Mom and Dad, the words of encouragement will never be forgotten.

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ABSTRACT

Although the incidence of breast cancer is high among Caucasian women, African American women continue to experience higher breast cancer mortality and lower survival rates in comparison to Caucasian women of the same age and cancer stage (Thomas, 2004). Research regarding breast cancer screening among ethnic minority women from lower socioeconomic groups is extensive, but there is a lack of research that investigates barriers to breast cancer screening among African American women of higher socioeconomic status. The purpose of this study was to compare health beliefs of African American and Caucasian women regarding perceived barriers to breast cancer screening.

The sample for this study consisted of 80 women, 40 African American and 40 Caucasian women, who were between the ages of 40 to 80 years. The study was conducted at two local community churches located in Tampa, Florida. The barriers subscale from the Health Belief scale was used for data collection. Descriptive statistics were used to analyze demographic data, and independent t-tests were used to compare the two groups in their perceived barriers. Results revealed that both groups perceived barriers to breast cancer screening, there were more similarities than

differences. However, African American women were significantly more likely to indicate that having a mammogram would make them worry about breast cancer ($p = 0.39$).

Although previous research has shown differences between African American and Caucasian women, this study did not support those results. The two groups of women were similar in age education and marital status and all were active in their churches. Perhaps these similarities led to the lack of differences in perceived barriers scores between the two groups. This finding lends support to the idea that socioeconomic status more than race leads to disparities in breast cancer screening.

Chapter One

Introduction

Breast cancer is the most common cancer in African American and Caucasian women, and is the leading cause of death among American women age 40-44 (National Cancer Institute, 2005). Breast cancer mortality is second to lung cancer as the leading cause of all cancer deaths in women (Yarbrough, Frogge, Goodman & Wald, 2000). In 2004, approximately 216,000 cases of breast cancer were reported, and 40,000 deaths were related to breast cancer in the U.S. (Kasper, Braus, & Fauci, 2003). It is estimated that there will be 211,240 new invasive cases of breast cancer in 2005 the U. S., and 40,410 of those cases will result in death (Centers for Disease Control, 2005). The National Institutes of Health Consensus Development Conference statement emphasized that by the year 2009, more than 1.8 million women will be newly diagnosed with invasive breast cancer, and of that number 30% will die of breast cancer (Yarbro et al., 2000). According to the National Breast Coalition, breast cancer mortality remains consistently higher among African American women than Caucasian women. Statistics related to breast cancer incidence, mortality, and survival reveal a disparity between African American women and Caucasian women (Yarbro et al., 2000).

According to the American Cancer Society (ACS, 2005), the incidence of breast cancer is higher in Caucasian women, but African American women experience higher mortality and lower survival than Caucasian women. Statistics reported by the American Cancer Society in the year of 2004 show the survival rate of breast cancer in African American women is 63% compared to 78% in Caucasian women. It is estimated for the year of 2005 the number of expected breast cancer cases among African American women will be 19,240, and 5,640 of those cases are expected to result in deaths. This data suggests that African American women are likely to have advanced disease when diagnosed, and are less likely to use secondary prevention procedures such as breast self examinations (BSE) and mammography. According to the American Cancer Society (ACS, 2005), the key to surviving breast cancer is early detection and treatment. Currently, mammography is the best method of detecting breast cancer that cannot be felt during clinical breast examination (ACS, 2005). Although increases in mammography screening among African American women have occurred, screening behaviors still vary greatly among African American women (CDC, 2005). Disparity in the use of cancer screening and in seeking care may be related to differences in the perception of cancer risks (Thomas, 2004).

Statement of the Problem

Although the incidence of breast cancer is higher among Caucasian women, African American women continue to experience higher breast cancer mortality and lower survival rates in comparison to Caucasian women of the same age and cancer stage (Thomas, 2004). Research regarding breast cancer screening among ethnic minority women from lower socioeconomic groups is extensive, but there is a lack of research that investigates barriers to breast cancer screening among African American women of higher socioeconomic status (Thomas, 2004).

The problem to be studied is to examine the health beliefs of African American women regarding cancer screening related to perceived barriers, as compared with Caucasian women. The purpose of this study is to compare perceived barriers to breast cancer screening between African American women and Caucasian women.

Research Questions

This study was designed to answer the following questions:

1. Is there a significant difference between African American and Caucasian women in their perception of barriers to breast cancer screening?
2. What are the highest ranked barriers to breast cancer screening for African American and Caucasian women?

Definition of Terms

For the purposes of this study, the following term is defined:

Barriers: Perceived emotions, physical or structural concerns related to mammography or BSE behavior that interferes with screening (Champion, 1999).

Significance to Nursing

According to the (CDC, 2005) many deaths from breast cancer could be avoided by increasing cancer-screening rates among women at risk. African American women are more likely to die from cancer than Caucasian women. African American women have a higher mortality rate and a lower survival rate than Caucasian women. It is important as advanced practice nurses that we become aware of contributing factors that place African American women in a higher risk category of dying from breast cancer. As a clinician, an important goal would be to reach out to the African American community and educate them about breast cancer screening. Through education this can increase their awareness related to prevention, intervention, and screening for detecting early stage breast cancer. Also, this process will give them the understanding of the extreme importance of breast cancer screening. If we could meet these goals through this process it is possible that outcomes related to breast cancer will and could improve among African American women, and breast cancer statistics rates will improve, such as a decrease in the mortality rate among and an increase in survival rates among African American women with breast cancer.

In the United States (U.S) breast cancer is a significant health issue among women. One goal of Healthy People 2010 is to increase the percentage of women aged 40 years and older who have a mammogram every two years to 70% Achieving this goal will require intervention strategies that meet the needs of diverse population including African American women (Legler, 2004).

This study may shed light on differences in perceived barriers to breast cancer screening in African American and Caucasian women. Nurses are in the best position to address the needs of women at risk for breast cancer. During the screening process we have the capability of finding out pertinent information regarding the women we are treating. This could be done by assessing the, psychological, social and economic concerns during screening for breast cancer. We need to be aware of the specific needs of the African American women especially the psychosocial predictors that contribute to them participating in breast cancer screening programs. Education and being patient advocates are our responsibility as clinicians. We need to educate our clients, but we also need to be educated, and we need to be culturally competent. By being culturally competent this mean we are more sensitive towards the culture of the client. This allows us to understand why they may respond to preventive health in a certain manner, and enlighten us about their understanding of disease process and treatment. We need to be aware of psychosocial and physical barriers that contribute to the problem of breast cancer among African American women, which place them at a

greater risk of increased mortality, and decreased survival. Careful assessment can serve as a great tool in assessing ethnic and high-risk populations. Our enhanced knowledge can benefit the women to whom we deliver care.

Chapter Two

Review of Literature

This chapter reviews the empirical literature relevant to breast cancer screening among African American and Caucasian women. First, the conceptual framework is presented. Then empirical research relevant to perceived barriers to breast cancer screening among African American women and Caucasian women is reviewed. This is followed by a summary of the literature.

Conceptual Framework

The Health Belief Model (HBM) is a model that serves as the conceptual framework for identifying and explaining factors associated with the practice of disease detection screening and health promoting behaviors. According to (Rice, 2000) the HBM derived from Lewin, Dembo, Festinger, and Sear's in 1944 Level of Aspiration Theory, which attempts to explain and predict health behaviors by focusing on attitudes and beliefs of individuals. The HBM was first proposed in the 1950s by social scientists for the United States Public Health Service to explain a person's lack of engagement in preventive health behaviors (Rice, 2000).

Health Belief Model

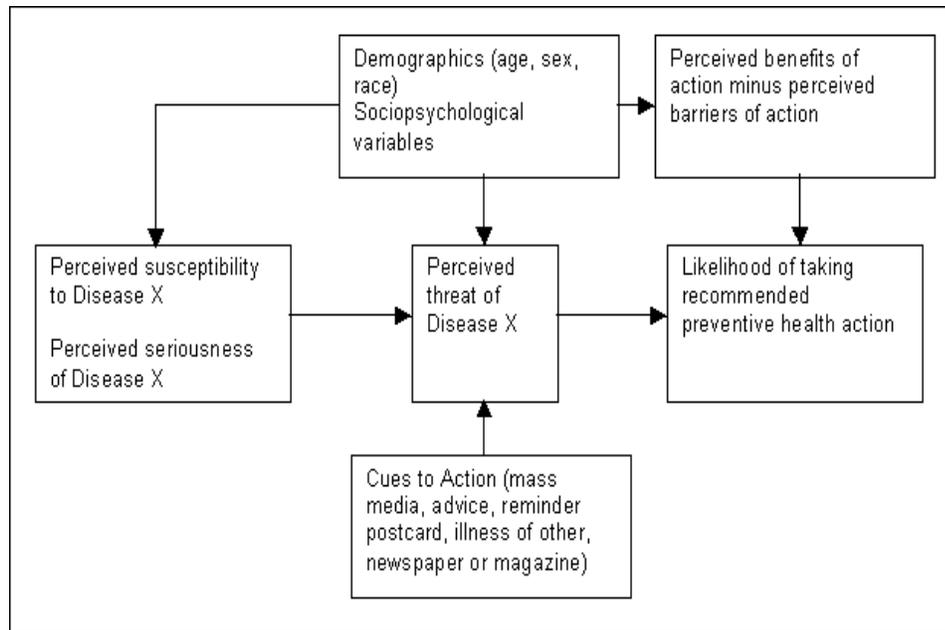


Figure 1. Health Belief Model (HBM)

According to Rice (2000), the HBM hypothesized that health related action depends on the following factors: 1) sufficient motivation (or health concern) exists to make health issues salient or relevant; 2) there is a belief that one is susceptible (vulnerability) to a serious health problem or to sequel of that illness or condition (perceived threat). Perceived threat is identified by two key variables, perceived susceptibility and perceived severity. There is a belief that following health recommendations is beneficial (perceived benefit) in reducing the threat at a subjectively acceptable cost. Cost refers to perceived barriers that must be overcome to follow health recommendation. The HBM explicates that for behavior change to occur, an individual must perceive a disease as serious, must perceive themselves as at increased risk for developing the disease (susceptibility), the perceived benefits of action must outweigh the perceived barriers to taking the action, cues to take action, and their confidence in their ability to perform the action must be high (self-efficacy) (Champion, 1987). According to Champion (1987), a number of studies have applied the Health Belief Model (HBM) to prediction of breast self-examination (BSE). These studies have shown perceived barriers to be the strongest predictor of BSE. The Health Belief Model (HBM) established a framework for understanding health behaviors and is often applied to breast cancer screening (Champion 1993, Foxall, Barron & Hauck, 1999). There is further discussion on the HBM and cancer barriers throughout this review.

Review of Empirical Research

Perceived Barriers

There are significant barriers associated with the lack of participation in breast cancer screening programs among African American women. Due to perceived barriers related to cancer screening, African American women may experience higher breast cancer mortality and lower survival rates compared with Caucasian women of comparable age and cancer. The following studies address the barriers to breast cancer screening perceived by African American women.

Lukwago, and colleagues (2003) conducted a study examining associations between five factors: collectivism, spirituality, racial pride, present and future time orientation and breast cancer related knowledge. They also examined barriers to mammography and mammography use, stage and change among urban African American women. The sample in this study consisted of African American women aged 18 to 65 (N=1241), recruited from 10 public health centers in the city of St. Louis Missouri. Informed consent was obtained. Women aged 40 years and older were included in the analyses. Measures included socio-cultural constructs, breast cancer related knowledge, barriers to mammography, mammography use, and stage of change. Socio-cultural constructs were measured with scales developed by the project team (Lukwago et al., 2003).

Lukwago et al. (2003) also examined breast cancer-related knowledge, barriers to mammography, and mammography use and stage of change. Results showed that women who had a present time orientation were less educated, had lower incomes, were unemployed; report no history of breast cancer or breast cancer treatment. According to the authors, these women also had more barriers to mammography. Mammography use and stage of change present-orientation was negatively associated, and mammogram age and mammogram knowledge were positively associated. Age, employment, physician or nurse recommendation to get a mammogram, and mammogram knowledge were positively associated with mammography stage of change. Lukwago et al. (2003) concluded that present-time orientation was negatively associated with breast cancer related knowledge and mammography, and positively associated with perceived barriers to mammography. They also concluded that having a present-time orientation is probably more likely associated to income than race. Receiving a recommendation from health a care provider was shown to be an important predictor of mammography in this study. It is suggested that practitioners working to promote mammography might consider integrating time-orientation and racial pride into their approaches for African American women. This type of approach may enhance intervention strategies that are focused on promoting breast cancer screening among African American women and help eliminate breast cancer disparities.

Frequently cited breast cancer screening for African American women included fear of finding a cancerous lump, cost, lack of provider recommendation, lack of knowledge about the need and recommendation for breast cancer screening. Also, limited perception of risk of developing breast cancer, distrust in the health delivery system, and presence of multiple illnesses taking priority over breast cancer screening were indicated as fears to breast cancer screening (Phillips, Cohen, & Tarzian, 2001).

Phillips et al. (2001) conducted a qualitative study to describe the experience and meaning of breast cancer screening for ten African American women. The sample consisted of 23 low and middle-income African American women. Eight low-income and 15 middle-income African American women without a known history of breast cancer were recruited from metropolitan areas of the northeastern United States. Age ranged from 45 to 81 years, with a mean age of 52. Women over age 40 were recruited because of the recommendation to have a baseline mammogram by age 40. Women were included from both low and middle-income categories because research with African American women showed that income level influenced life experience among African Americans. This study was based on hermeneutic phenomenological methods. Primary investigators collected data using open-ended unstructured interviews that began by asking women to describe their experiences with breast cancer screening. Breast cancer screening refers to breast self-exam (BSE), mammography, and professional breast exam combined. Each participant was encouraged to describe her

experience completely. Interviews included asking women to describe the last time they did breast self-examination, and to describe their last professional breast examination. The interviewer asked probing questions to allow the women to clarify and elaborate one or more of the screening methods, and they were asked to talk about that. Demographic data were also obtained from each woman. Participants were interviewed for 60 to 90 minutes (Phillips et al., 2001). Findings of the study showed that the themes in the study were similar between low and middle-income participants. However differences showed low-income women expressed problems with lack of access to healthcare while more middle-income women discussed use of alternative and holistic therapies. Overall screening rates were less than optimal in both groups. Only ten participants (nine middle-income, one low-income) reported consistently practicing monthly BSE and having mammography, and professional breast examinations. Participants identified the overall theme minding the body, self, and spirit as major components in shaping breast cancer beliefs, and practices. Spirituality and religious beliefs influenced their approach to BCS. Findings also indicated that social influences, social support, and provider recommendation and support facilitated BCS (Phillips et al., 2001).

According to Phillips et al. (2001) when barriers to accessibility, and acceptability of health care were reduced, African American women were found more likely to engage in BCS. Participants indicated that race and ethnicity influenced

health-care experiences, and most of the participants mentioned character traits of their providers, such as caring and respectful attributes as influencing the bond and degree. These findings showed that the history of distrust between African Americans and health care providers in the United States could be transcended through meaningful relationships. According to the authors, building on naturally existing sources of support and improving patient-provider relationship has the potential for increasing BCS and earlier detection of cancer among African American women.

Lauver, Settersten, Kane and Henriques, (2001) believed that psychosocial variables such as beliefs, feelings, and norms influenced health behaviors, and external conditions such as environmental variables also contributed to health behavior. To support this theory, Lauver et al. (2001) proposed that a message tailored on psychosocial variables, such as beliefs, feelings and external barriers regarding breast cancer screening would be more efficacious in promoting women's utilization of screening than a standard message that provided only professional, normative recommendation about screening.

Lauver et al. (2001) conducted a randomized controlled trial with three messages conditions. The purpose of the trial was to test the effects of alternative messages on mammography and clinical breast examination (CBE) utilization over time and to examine the combined effects of such messages and external barriers.

Three messages were compared: no message (control group), recommendations about

screening, or recommendations plus tailored discussion (on beliefs, feeling, costs, and access). The sample size consisted of 101 women from a diverse population, which included African American and Caucasian women (age range 51 to 80 years old) who had not had mammograms in the prior 13 months. Advanced practice nurses delivered the messages over the telephone. Outcome measures were women's mammography and CBE utilization three to six months post intervention (short-term follow-up) and 13-16 months after short-term follow-up (long-term follow-up). The results concluded that overall, messages that were tailored on theoretically derived concepts of beliefs, affect, and external barriers promoted breast screening among women with high external barriers to screening but had differential effect among women with low barriers. Both messages promoted mammography and CBE utilization at short-term follow-up. Utilization increased over time in all groups. Mammography utilization was greater for the tailored-message group compared with the recommendations only group at long-term follow-up. Among participants with high external barriers, participants in the message conditions, especially the tailored message had the highest screening rates. Among participants with low barriers, screening rates were similar across conditions. The most common external barriers to mammography were the high costs of screening, transportation, and parking. The investigators concluded that external barriers influenced health related behaviors, such as breast cancer screening.

Graham (2002) conducted a descriptive correlational design to examine the relationship between health beliefs and practice of breast self-examination (BSE). Champion's revised Health Belief Model Scale was used for data collection. One hundred and seventy-nine black women were recruited from a major teaching hospital, churches, and health fairs in New York City. Inclusion criteria included women age 20 to 49 that were able to read, write, and speak English. Participation meant responding to Champion's Health Belief Survey, and a short questionnaire soliciting demographic information.

Graham (2002) hypothesized that subjects who perceived greater barriers would report a lower frequency of BSE performance. Mean scores were obtained for barriers. Three of six items on the subscale emerged as making significant unique contributions to BSE, and the mean response to two items supported the researcher hypotheses. The two items were: 1) "Doing breast self-examination during the next year will make me worry about breast cancer", and 2) "Doing breast self-examination will take too much time". A relationship was found between health beliefs and BSE among black women. Further, the study found that health belief is much stronger in determining BSE performance for a given individual than background characteristics; this finding corroborates previous studies. The study revealed that although women perform BSE, many of them fail to follow the American Cancer Society guidelines for breast cancer screening, and others fail to perform breast exams (Graham, 2002).

Rahman (2003) conducted a study to assess perceptions and acculturation issues in breast cancer screening among uninsured and underinsured women in Lucas County, Ohio. The sample consisted of women from different community-based organizations where they voluntarily participated in breast cancer education programs. Participants ranged in age from 15 to 82 years (mean age 41.95 years, SD=15.83), and 64% were African American. Participants were interviewed by nurse practitioners. Barrier questions were analyzed based on 276 responses and the logistic regression was conducted on 165 observations due to missing values in the covariates.

The perceptions were based on the constructs of Health Belief Model, such as perceived susceptibility to breast cancer, perceived cancer, perceived severity of the disease, perceived benefits of mammography, and perceived barriers of having a mammogram. Barrier questions consisted of having 14 previously identified barriers of having mammogram extracted from previously published research. The results related to perceived barriers to breast cancer screening showed that 87.5% of the participant agreed with the statement that they were afraid of having a mammogram because something wrong may be found. Other barriers included financial ability to pay for the mammogram, fear of treatment or surgery, and experiencing pain during the mammogram (Rahman, 2003).

Paskett and colleagues (2004) conducted a study to increase mammography use among low-income minority, and rural women over 40 years of age. The sample

consisted of 295 African American women, 371 Native American women, 226 Caucasian women, and five women who were classified as being multiracial. Data from 892 women were analyzed for this study. Women in each racial group were compared with regard to demographics, cancer screening habits, breast carcinoma risk factors, and mammography adherence, as well as with regard to barriers, beliefs and knowledge regarding cancer screening. Survey comparisons were made among racial groups with respect to knowledge, attitudes, and behaviors regarding breast and cervical carcinoma screening. The results showed that overall, Native American and African American women had lower levels of knowledge, more inaccurate beliefs, and more barriers to breast cancer screening compared with Caucasian women. The investigators concluded that although all low-income rural women experienced significant barriers to cancer screening tests, these barriers were more common for minority women when compared to white women (Paskett et al., 2004).

Ahmed, Fort, Elzey, and Bailey (2004) conducted a study through in-depth focus group discussion to gather information about facilitating factors and barriers to mammography screening from experiences of regularly compliant, underserved women. The sample consisted of 25 African American women, aged 40 and older with personal incomes of \$15,000 or less, who adhered to routine mammography screening guidelines (1-2 years from ages 40 thru 49 and annually beginning at age 59). The discussions centered on the influences they considered as either empowering factors or

barriers to breast cancer screening. The results indicated that healthcare system barriers were one of the many barriers associated with barriers to mammography screening; this included physician characteristics, the health care facility, the staff and management. Some described mammography as painful and several said that the discomfort of the procedures was discouraging. Another inhibitor described by the participants was that as they aged, the number and types of screening tests became overwhelming and depressing, and an increase in stress occurred while waiting for the results, they also found that while finding nothing during a mammogram was a relief as well as satisfying and reassuring, a null finding sometimes produced an over-confidence (Ahmed et al., 2004).

Ogedegbe and colleagues (2005) conducted a qualitative study to elicit and explore the perceptions of barriers to and facilitators of colorectal, cervical, and breast cancer screening among minority women. The sample included 187 women, 44% were African American, and 51% were Latinos' with an age range of 50 to 69. To be eligible for the study, the participants had to be able to speak, read, and write in English, Spanish, or Creole, and have visited one of the community health centers. Participants were asked open-ended questions designed to explore barriers and facilitators of cancer screening behaviors. Each participant interview was divided into sections focusing on particular screening tests such as mammography, home fecal occult blood test (hFBOT), or sigmoidoscopy. Qualitative analysis of participant's

response revealed three major categories of cancer screening behavior: 1) patient attitude and beliefs; 2) social network experience; and 3) accessibility of services. Results showed that attitudes and beliefs identified as barriers to cancer screening included a lack of knowledge about cancer screening or the disease cancer (patients never thought about screening, or heard of screening test) and a fear of cancer, and pain. Many of the participants indicated that part of their fear included the pain associated with the procedure, and this prevented them from having the exam or procedure. Also, the lack of symptoms, such as pain, was identified as a barrier to mammography screening, and knowledge of someone who was harmed by cancer screening procedures, and discouragement from family and friends were identified as cancer screening barriers. External barriers included cost, transportation, and location. The most commonly cited barriers to breast cancer screening behaviors were the perception of the participant not needing the test due to good health, an absence of symptoms, and lack of knowledge. Other important barriers elicited from participant were the fear of pain, and the fear of having the test. Fear was the most commonly cited reason for not planning to have a mammogram in the future (Ogedegbe et al., 2005).

Han, Wells, and Primas (2003) conducted a study to identify differences in the prevalence of ever having had a mammogram, and having had a recent mammogram between older black women. They also compared factors associated with

mammography use in older black and white women. The sample consisted of 449 black women, and 3,328 white women. Data analyses of this study were obtained from the 1998 National Health Interview Survey (NHIS). Chi-square tests were used to examine differences in the prevalence of mammography use and other investigated factors between older black and older white women. Second, multivariate logistic regression models were applied to evaluate the effect of the investigated variables and their possible interactions on mammography use.

The result of the two chi-square tests showed that older white women were more likely to have ever had a mammogram than older black women. There was no difference in mammography use between older blacks and whites. The differences in the examined factors between older whites and older blacks included variables such as; age, education, marital status, income, and Medicare supplements. Older blacks were more likely to report poorer health, functional disability, and a history of lifetime alcohol abstinence than whites. These investigators concluded that the differences in barriers to mammography use between older black and older white women included lack of health care for black women without a usual source of care. Older age and higher education level were risk factors for both older black and white women and the lack of recent mammography. Education effect was significantly stronger in older black women than in older white women. This study showed that having less than 12 years of education was a risk factor for mammography screening and was a barrier to

screening among older black and white women. It also suggested that having income was a risk factor for non-use of mammograms in older white women but not older black women. Not having an usual source of care was a barrier for both black and white women, but was a greater barrier for older black women. They also concluded that barriers to mammography use in older black and white women are complex, and future research is needed to confirm the differences and investigate whether other factors are related to mammography use in older black and white women (Han et al., 2003).

Summary

According to statistics, breast cancer incidence is higher in Caucasian women and breast cancer mortality is higher in African American women. Based on these facts, it's apparent that there is a need for ongoing research related to breast cancer screening and perceived barriers among African American women. Current literature indicates that there are many barriers that contribute to the lack of breast cancer screening among African American women. Barriers such as cost of health screening, lack of access to care, fear associated with cancer, and pain associated with cancer contributes to the mortality issues African American women are faced with in our society today. In order for African American women to have decreased mortality and increased survival, there is a need for more research, education and intervention programs. Through research, education, and intervention programs, breast cancer screening among African American

women could improve. Through this process African American women could benefit from decreased barriers and improved outcomes.

Chapter Three

Methods

The purpose of this study was to compare perceived barriers related to breast cancer screening among African American and Caucasian women. This chapter discusses the sample, the setting, the instrument, the procedures and the data analysis.

Sample and Setting

Participants were 40 years of age or older to meet American Cancer Society guidelines for breast cancer screening (ACS, 2005). Forty African American women and 40 Caucasian women were recruited to participate. Subjects were recruited from two local Baptist churches located in Tampa, Florida. All subjects were able to read, write, speak, and understand English. Only African American and Caucasian women were included in this study. Women with a history of breast cancer, and Hispanic women of any color were excluded. Religion and marital status were not exclusion criteria. Sample size was based on a power analysis with alpha level set at .05 and power at .80. It was determined that a total of 80 women (40 in each group) would provide sufficient power to determine significant differences.

Instruments

Health Belief Model: Barriers Questionnaire

The Health Belief Model Questionnaire was the instrument used in this study (Appendix A). Consent to use the instrument was given by the author (Appendix B). The Health Belief Model sub-scales measure six concepts a) benefits, (b) health motivation, (c) self-efficacy, (d) susceptibility, (f) barriers, and (e) seriousness. For the purpose of this study, perceived barriers are the only construct being measured (Champion, 1998). The barriers scale has two subscales, barriers to mammography (five items), and barriers to BSE (six items). The format of the subscales is a 5-point Likert-type scale from strongly disagrees to strongly agree. High scores on the sub-scales mean greater perceived barriers (Champion, 1998).

Validity and Reliability.

According to Champion (1999) the relationship between barriers and compliance with mammography recommendations has been critical in influencing women on screening behaviors. The construct barrier has been shown in past work to be related to mammography behavior. To support this theory, content validity was evaluated. Construct validity was examined by using factor analysis. Overall, items reflected strong internal consistency reliability and test-retest reliability. A Cronbach-alpha of .88 for the barrier scale was reported (Champion et al., 1999).

Demographic Data Form

A demographic tool was developed for this study (Appendix C). Data from the demographic includes age, marital status, education level, occupation, primary care physician, ethnicity, religion preference, and church affiliation.

Procedures

Approvals

Approval to conduct the study was obtained from the organizational leaders at the local churches where data was collected (Appendix D). Then approval was received from the University of South Florida Health Sciences Center Institutional Review Board for protection of human Subjects (Appendix E). Before the women completed the instrument, the study was explained with information about the study benefits, risks of participation, and confidentiality. Then informed consent was obtained (Appendix F). A copy of the consent was given to each subject to keep for her records. The identity of the subjects was kept anonymous; no personal identifiers were on the data forms. Appendix (G) for Human Subjects

Data Collection

The investigator approached subjects by visiting each church on one occasion. Each subject was given a packet that included an informed consent letter, demographic data form, and a HBM questionnaire. Upon completion of the forms, the investigator collected them from each subject. Raw data was locked in a cabinet in a locked room.

Data Analysis

Descriptive statistics were used to analyze demographic data, including means, standard deviations, frequencies, and percentages. Data was entered and analyzed using the Statistical Package, for the Social Sciences (SPSS) computer software version 12. Independent t-test comparisons were used for research question one.

Research Question 1: Is there a significant difference between, African American and Caucasian women in their perception about breast cancer screening?

Research Question 2: What are the highest ranked barriers to breast cancer screening for African American and Caucasian women?

The mean score for each item on Barriers subscale was analyzed and presented from greatest to least for each of the two groups. The two subscales were analyzed by examining frequencies and percentages for each group. Finally, an independent t-test was calculated for each item.

Chapter Four

Results, Discussion, and Conclusions

This chapter presents findings of the study. Included in this chapter are the study results with a discussion of the results, conclusions, and recommendation for future research.

Results

Sample

The study group (n=80) consisted of 40 African American women and 40 Caucasian women. Ages ranged from 40 to 80 years for the African American women with a mean of 54.8 years, and for the Caucasian women, age ranged from 41 to 71 years with a mean of 54.7 (Table 1). Marital status included single, married, divorced, widowed and separated; in both groups the majority of the subjects were married (Table 2). Education level of the sample ranged from junior high through graduate degrees. Subjects were very similar in their levels of education, with Caucasian women having more graduate degrees (Table 3).

Table 1. Means, Standard Deviations and Range of Ages of Women

Group	<i>n</i>	<i>mean</i>	<i>SD</i>	<i>range</i>
African American	40	54.8	10.4	40-80
Caucasian	40	54.7	9.3	41-71

Table 2. Frequencies and Percentages of Women by Marital Status

Marital Status	African American		Caucasian	
	<i>Frequencies</i>	<i>Percentages</i>	<i>Frequencies</i>	<i>Percentages</i>
Single	5	12.5	2	5
Married	25	63	29	72.5
Divorced	4	10	9	22.5
Widowed	4	10	0	0
Separated	2	5	0	0
Total	40	100	40	100

Table 3. Frequencies and Percentages of African American Women by Education Level

Education Level	African American		Caucasian	
	<i>Frequencies</i>	<i>Percentages</i>	<i>Frequencies</i>	<i>Percentages</i>
Junior High	5	12.5	1	2.5
High School	16	40	15	37.5
College Degree	16	40	17	47.5
Graduate Degree	3	8	7	17.5
Total	40	100	40	100

To answer the first research question, analysis involved an independent t-test comparison of barriers to breast self-examination scores between African American and Caucasian women. There were no significant differences found between two groups (Table 4).

Table 4. Independent *t*-test Comparison of Mean Subscale Barriers to Breast Self Examination Scores between African American and Caucasian Women

Group	<i>n</i>	<i>mean</i>	<i>t</i>	<i>p</i>
African American	40	11.2	0.610	0.54
Caucasian	40	10.5		

Ranking Barriers

To answer Research Question two, item means for the barriers to breast self-examination (BSE) scores were calculated and placed in rank order (Table 6). There were similarities; no items showed significant differences. The greatest barrier noted was that African American women felt that doing breast self examination during the next year would make them worry about breast cancer. The second subscale score was for barriers to mammography. The highest ranked barrier in both groups was “would be painful”. The lowest ranked barrier for both groups was “would be embarrassing”. A significant difference was found on one item, “having a mammogram would make me worry about having breast cancer” ($p=.039$) (Table 7).

Table 5. Independent *t*-test Comparison of Mean Subscale Scores of Barriers to Mammography Scores between African American and Caucasian Women

Group	<i>n</i>	<i>mean</i>	<i>t</i>	<i>p</i>
African American	40	11.1	0.67	0.51
Caucasian	40	10.4		

Table 6. Independent t-test comparison of Breast Self Examination (BSE) barrier item scores between African American and Caucasian Women

Exam BSE	African American	Caucasian	<i>t</i>	<i>p</i>
	<i>m</i>	<i>m</i>		
Doing BSE during the next year will make me worry about breast cancer	2.22	1.88	-1.35	.182
I feel funny doing BSE	2.15	1.98	-.642	.523
Doing BSE will be Embarrassing	1.80	1.75	-.218	.828
Doing BSE will be unpleasant	1.80	1.80	.000	1.00
Doing BSE will take too much time	1.70	1.57	.727	.470
I don't have enough privacy to do BSE	1.60	1.43	-1.20	.235

Table 7. Independent t-test comparison of Mammography barrier item scores between African American and Caucasian Women

Exam Mammography	African American <i>m</i>	Caucasian <i>m</i>	<i>t</i>	<i>p</i>
Having a mammogram or x-ray would:				
Would be painful	2.92	2.65	-.906	.368
Make me worry about breast cancer	2.42	1.80	-2.10	.039
Would cost too much	2.10	2.08	-.097	.923
Would be embarrassing	1.97	2.10	.457	.649
Would take too much time	1.63	1.77	.852	.397

African American and Caucasian women were questioned about yearly mammography screening, and monthly breast self-examination. Eighty-five percent of the African American and 90% of the Caucasian women reported that they had ever had a mammogram in the past year. Fifty-five percent of the African American reported having yearly exams and 65% of the Caucasian women reported having yearly exams. African American women reported performing breast self-examinations more frequently than Caucasian women. (Table 8).

Table 8. Frequencies and Percents of American and Caucasian Women by Participation in Breast Self Examination and Mammography

Exam	African American		Caucasian	
	<i>Frequencies</i>	<i>Percents</i>	<i>Frequencies</i>	<i>Percents</i>
Have you ever had a mammogram	34	85	36	90
Have you had a mammogram the past 12 months	22	55	26	65
Do you have a mammogram scheduled	7	17.5	6	15
Do you perform BSE monthly	24	60	19	47.5

Discussion

If detected early, a diagnosis of breast cancer can be treated effectively with the end result of a positive outcome. By following the guidelines recommended by the ACS (2005), performing monthly breast exam, and getting yearly mammograms, undesirable outcomes related to breast cancer can be prevented.

Although African American women have a lower incidence of breast cancer occurrence than Caucasian women, statistical data continues to show that more African American women die from breast cancer, because by the time they are diagnosed they have advanced infiltrating disease (ACS, 2004). The need for breast cancer screening and early detection remains a crucial issue for African American women.

This study compared perceived barriers to breast cancer screening among African American and Caucasian women. There were remarkable similarities between the two

groups demographically. There was not much difference in their educational levels, and participants were active in a local church. These two groups also were similar in that the majority of the women in each group was married and employed. Results of this study revealed that African American women reported performing breast self-examination (BSE) somewhat more frequently than Caucasian women, and had mammograms less frequently than Caucasian women. This result was unlike previous studies that found significant differences among African American and Caucasian women. Lukwago et al. (2003) reported that African American women had a lack of knowledge about the need and recommendation for breast cancer screening. This study indicates that African American women have knowledge about breast cancer screening and are aware of the guidelines for screening. It is apparent that race did not affect results of this study as indicated in earlier studies. Phillips et al. (2001) indicated in their study that race and ethnicity influenced health care experiences.

Although more than half of the women reported doing breast self-examination (BSE) and having had a mammogram, some did not. Between 35 and 45% had not had a mammogram in the past year and 40 to 57% had not done monthly breast self-examination (BSE). It is evident that these women who attended church have awareness about breast cancer screening. This may be the result of the church being actively involved in community outreach programs for breast cancer screening, or members that are involved in health care ministries within the church. Also members may have had

health care backgrounds. Somehow these women in the sample have been educated regarding breast cancer screening. This study indicates that the church may be a good place to reach out to women regarding breast cancer screening and that this could be the avenue to developing further outreach programs, intervention programs, and educating women. Also, clinicians could be utilized in this setting and can learn about the important impact that the church's' community plays in reaching out to community, and being used as a resource for providing information to women about breast cancer screening. The church can have a positive impact on breast cancer screening programs. It is important that advanced nurses develop breast cancer screening programs and intervention programs that will target populations that are vulnerable. Nurses are challenged by the barriers that prevent the underserved from participating in these programs. Clinicians and nurse educators need to come together to develop outreach programs that would provide education at a level of understanding for targeted populations.

Sample

Findings from this study point out that African American and Caucasian women in the sample were comparable in age, with very similar mean ages (54.8 and 54.7). The two groups' educational levels were similar, but the Caucasian group had a higher level of graduate degrees, with 7.5% of African American women having had graduate degrees, and 17.5% of Caucasian women having graduate degrees. The study sample was limited to women from one geographic area. The study was also limited to African

American and Caucasian women only, no other ethnic groups were invited to participate in the study. Also, women with a history of breast cancer were not allowed to participate in the study. Further, women were sampled from two Baptist churches in one middle and upper middle class community located near a large academic setting. Thus, results may not be generalizable to all women.

Screening Behaviors

Surprisingly, findings from the study indicated that African American women performed breast self examination on a monthly basis more frequently than Caucasian women, with 60% of African American women performing breast self examination monthly compared to 47.5% Caucasian women doing so. This result supports previous research conducted by Graham (2002) who found that subjects who perceived greater barriers would report lower frequency of BSE performance.

However, this present study showed that slightly more Caucasian women report having had mammograms compared to African American women with 55% African American women and 65% Caucasian women having had mammogram. These findings support earlier studies conducted by Phillip et al (2001) and Lauver et al (2001).

Although no significant differences were found between African American and Caucasian women in their perceived barriers to either mammography or breast self-examination (BSE) some small differences emerged. African American perceived slightly more barriers than Caucasian women to breast self-examination (BSE) (mean=11.2) and

mammography (mean=10.5). The difference in perception regarding barriers to breast self examination (BSE) included worrying about breast cancer, taking too much time to perform the exam, and not having enough privacy.

When ranking the health belief model variable of barriers to breast self-examination BSE, and mammography total scores showed some differences between African American and Caucasian women. The findings from this study revealed that African American women were more likely to perceive more barriers to BSE and mammography than Caucasian women.

Ranking of Perceived Barriers

Barriers to breast self-examination (BSE) and mammography were ranked from greatest to least for both African American and Caucasian women. African American women ranked barriers higher in comparison to Caucasian women. The highest ranked barrier to breast self examination (BSE) for the African American women were that they felt funny performing breast self examination (BSE), and that performing breast self-examination (BSE) would make them worry about breast cancer. The least barrier was “I don’t have enough privacy to do breast self-examination (BSE)”. The highest ranked barrier to mammography for African American women was that they felt that having a mammogram would be painful, having the mammogram would make them worry about breast cancer, and the exam would cost too much. The Caucasian women highest ranked barrier for breast self-examination (BSE), “I feel funny doing breast self-examination”

and “doing breast self-examination (BSE) would make me worry about breast cancer”. The least ranked barrier for the Caucasian group was “I don’t have enough privacy to do breast self-examination”. Caucasian women greatest ranked barriers to mammography included, “mammography would be painful” and “mammography would take too much time”. The least barrier to mammography for the Caucasian women was “mammography would be embarrassing”. To further explore perceived barriers to breast cancer screening an analysis using an independent t-test comparison of means subscale scores of barriers to breast self-examination (BSE) and mammography scores between African American and Caucasian women were done. A significant difference was found on one item, “having a mammogram would make me worry about having breast cancer” ($p = 0.39$).

Barrier Items

Pain was a significant barrier for African American women in comparison to Caucasian women in this study. African American women reported that they felt that having a mammogram or x-ray would be painful more frequently than Caucasian women. This finding is also supported by previous studies conducted by Rahman (2003) who found that women reported that experiencing pain during the mammogram as a barrier to having a mammogram. Another significant barrier for African American women in this study was that they perceived that mammography would make them worry about cancer and they also perceived that performing breast self-examination BSE would make them worry about breast cancer. It was noted throughout the study that these barrier items were

found to be the greatest barrier for African American women in comparison with Caucasian women. Caucasian women had fewer barriers than the African American women. The Caucasian group barriers consisted of cost and embarrassment of having a mammogram. The fact that this group reported cost as a barrier is not an unusual finding. This finding supports findings from previous studies. Lauver et al. (2001) found that one of the most common external barrier to mammography included high cost to screening, which influenced breast cancer screening this study sample included a diverse population of African American and Caucasian women.

Conclusion

This study found more similarities than differences between African American and Caucasian women in their perceived barriers to breast cancer screening. Never the less it is important for African American women to be aware of the resources for detecting breast cancer, and it is important for them to continue to participate in breast cancer screening to prevent increased mortality. Advanced practice nurses have a responsibility to be directly involved with the community, educating our women and providing them with resources that will allow them to receive the necessary screening for breast cancer. The perceived barriers that were identified in this study need to be addressed. Women reported that they felt that having a mammogram would be painful, and doing breast self examination (BSE) was time consuming, and some reported a lack of privacy. These barriers are all issue that need to be examined for future prevention and

future research. It is important that the awareness of the ACS guidelines for breast screening be voiced to all women, especially those that currently do not comply.

Recommendation for Future Research

It is important that there continues to be ongoing research regarding breast cancer screening, this study should be conducted using a sample consisting of a diverse population that includes other ethnic groups. This will provide a better, possibly a greater significant among different groups. Exploring the research can enhance clinical practice among advanced nurses. This will allow a range of cultural experience for clinician, and help us identify each woman individuals need according to her culture, ethnicity, and beliefs. This study should be conducted in a different geographic region; this would help determine if the differences among African American women and Caucasian women related to perceives barriers to breast cancer screening are significant and if they are related to their geographic region.

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Appendices

Appendix :A

Health Belief Questionnaire

Breast Self-Examination

1. I feel funny doing breast self-examination

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
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2. Doing breast self-examination during the next year will make me worry about breast cancer.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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3. Breast self-examination will be embarrassing to me.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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4. Doing breast self-examination will take too much time.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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5. Doing breast self-examination will be unpleasant.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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6. I don't have enough privacy to do breast self-examination.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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Appendix: A

Health Belief Questionnaire

Mammography

1. Having a routine mammogram or x-ray of the breast would make me worry about breast cancer.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

2. Having a mammogram or x-ray of the breast would be embarrassing.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

3. Having a mammogram or x-ray of the breast would take too much time.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

4. Having a mammogram or x-ray of the breast would be painful.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
-------------------	----------	---------	-------	----------------

5. Having a mammogram or x-ray of the breast would cost too much.

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
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Appendix B

*Located on the campus of
Indiana University
Purdue University
Indianapolis*



INDIANA UNIVERSITY

July 22, 2005

SCHOOL OF NURSING

Natalie Bastien
6003 Grand Palm Drive #718
Tampa, FL 33647

Dear Ms. Bastien,

Thank you for your interest in my work. Enclosed is the instrument and article you requested. You have permission to revise the tool for your use as long as you cite my work and send me an abstract of your completed project.

Sincerely,

A handwritten signature in cursive script that reads "Victoria Champion".

Victoria Champion, DNS, RN, FAAN
Associate Dean for Research
Mary Margaret Walther/
Distinguished Professor of Nursing
Director of Cancer Control

VC:dg

Enclosure

CENTER FOR NURSING RESEARCH

1111 Middle Drive
Indianapolis, Indiana
46202-5107

317-278-2036
Fax: 317-278-2021

Appendix C:

Demographic Questionnaire

DEMOGRAPHIC QUESTIONNAIRE

1. What is your age? ____
2. What is your ethnicity?
 - a. Caucasian ____
 - b. African American ____
 - c. Hispanic ____
 - d. Non-Hispanic ____
 - e. American Indian ____
 - f. Asian ____
 - g. Pacific Islander ____
 - h. Other ____
3. Marital Status
 - a. Single ____
 - b. Married ____
 - c. Divorced ____
 - d. Widowed ____
 - e. Separated ____

Appendix C: (Continued)

4. What is your occupation? _____
5. Please indicate with a check mark the highest-grade level you completed.
Elementary _____ Junior High _____ High School _____ College
Degree _____ Graduate Degree _____ Doctoral Degree _____
6. What is your religious? _____
7. Church affiliation? Yes _____ or No _____
8. Please answer yes or no to the following questions regarding breast cancer screening and breast cancer.
 - i. Do you have a history of breast cancer? Yes _____ No _____
 - ii. Have you ever had a mammogram? Yes _____ No _____
 - iii. Have you had a mammogram in the past 12 months? Yes _____
No _____
 - iv. Do you have a mammogram scheduled? Yes _____ No _____
 - v. Do you perform breast self-exam monthly? Yes _____ No _____
 - vi. Do you have a primary care physician? Yes _____ No _____

Appendix : D

Bible-Based Fellowship Church of Temple Terrace

September 12, 2005

Natalie Bastien
6003 Grand Palm Drive #718
Tampa, FL 33647

Dear Mrs. Bastien,

Bible-Based Fellowship Church of Temple Terrace is in support of your research study on perceived barriers of African-American women and Caucasian women concerning breast cancer screening.

We understand that this research may assist nurses in identifying various factors that may influence the screening habits of women and may guide interventions in the future. We are also in agreement with administering the study to members of our congregation through various ministries in our church. You have explained to me that each participant will receive an explanation of the study, given time to ask questions and then the study will be administered.

You have also explained to me that participation is voluntary and that there are no risks in participation. I have been assured of the confidential and anonymous nature of your research; therefore you have my permission to conduct your research.

Sincerely,



Rev. Earl B. Mason, Sr., Th.D.
Founding & Senior Pastor

EBM/im

Appendix D



Natalie Bastien
6003 Grand Palm Drive #718
Tampa, FL 33647

Dear Mrs. Bastien,

I am in support of your research study on perceived barriers of African American women and Caucasian women concerning breast cancer screening.

I understand that this research may assist nurses in identifying various factors that may influence the screening habits of women and may guide interventions in the future. I am also in agreement with administering the study after church service on any Sunday. You have explained to me that each participant will receive an explanation of the study, given time to ask questions and then the study will be administered.

You have also explained to me that participation is voluntary and that there are no risks in participation. I have been assured of the confidential and anonymous nature of your research. Therefore you have my permission to conduct your research.

Sincerely,

Jeff Williams
Senior Pastor

Appendix E



October 17, 2005

Natalie Bastien, MSN
College of Nursing
MDC22

RE: **Exempt Certification** for Application for Exemption
IRB#: 104116
Title: *A Comparison of African American And Caucasian Women Concerning Perceived Barriers to Breast Cancer Screening*

Dear Ms. Bastien:

On October 14, 2005, the Institutional Review Board (IRB) determined that your Application for Exemption **MEETS FEDERAL EXEMPTION CRITERIA two(2)**. It is your responsibility to ensure that this research is conducted in a manner consistent with the ethical principles outlined in the Belmont Report and in compliance with USF IRB policies and procedures.

Please note that changes to this protocol may disqualify it from exempt status. It is your responsibility to notify the IRB prior to implementing any changes.

The Division of Research Compliance will hold your exemption application for a period of five years from the date of this letter or until a Final Review Report is received. If you wish to continue this protocol beyond the five-year exempt certification period, you will need to submit an Exemption Certification Request form at least 30 days before this exempt certification expires. The IRB will send you a reminder notice prior to expiration of the certification; therefore, it is important that you keep your contact information current. Should you complete this study prior to the end of the five-year period, you must submit an Application for Final Review.

Please reference the above IRB protocol number in all correspondence to the IRB or the Division of Research Compliance. In addition, we have enclosed an Institutional Review Board (IRB) Quick Reference Guide providing guidelines and resources to assist you in meeting your responsibilities when conducting human subjects research. Please read this guide carefully.

OFFICE OF RESEARCH • DIVISION OF RESEARCH COMPLIANCE
INSTITUTIONAL REVIEW BOARDS, FWA NO. 00001669
University of South Florida • 12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-5618

Appendix E (Continued)

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to the Human Research Protections Program. If you have any questions regarding this matter, please call 813-974-9343.

Sincerely,



Paul G. Stiles, J.D., Ph.D.
USF Institutional Review Board

Enclosures: IRB Quick Reference Guide

Cc: Angie Reagan, USF IRB Professional Staff
Dr. Susan McMillan

IA-EC-05-01

University of South Florida
College of Health Sciences
Nursing

INFORMED CONSENT
Appendix F

Dear Participant:

I am a graduate student wanting to find out about perceived barriers to breast cancer screening among African American and Caucasian women over the age of 40. I am conducting a study that will identify some of these barriers, and would like your help in gathering this information. The next few paragraphs will define the main ideas of my study.

The title of my study is “Perceived Barriers to Breast Cancer Screening: A Comparison of African American and Caucasian Women”. The purpose of this study is to examine and compare perceived barriers related to breast cancer screening among African American women and Caucasian women.

A brief questionnaire that asks questions regarding breast cancer screening is attached. It should take no more than 10 minutes to complete. Do not write your name on this questionnaire. Your identity will not be recorded; the study is completely anonymous. Your participation is completely voluntary. The study will cost nothing, and you will not be paid for your participation. There is no right or wrong answers on the questionnaires; please try to be accurate and honest when completing this questionnaire.

At the completion of this study, I hope to have a better understanding of perceived barriers to breast cancer screening among African American and Caucasian women over the age of 40. Thank you for your participation.

If you complete and turn in the questionnaire, I will take that as evidence of your consent to participate in the study. If you choose not to participate, just return the forms blank.

Natalie Bastien, RN, BSN
College of Health Sciences
Nursing
University of South Florida

Appendix G

 **National Cancer Institute**
U.S. National Institutes of Health | www.cancer.gov

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 **Human Participant Protections Education for Research Teams**

Completion Certificate

This is to certify that

natalie bastien

has completed the **Human Participants Protection Education for Research Teams** online course, sponsored by the National Institutes of Health (NIH), on 09/26/2005.

This course included the following:

- key historical events and current issues that impact guidelines and legislation on human participant protection in research.
- ethical principles and guidelines that should assist in resolving the ethical issues inherent in the conduct of research with human participants.
- the use of key ethical principles and federal regulations to protect human participants at various stages in the research process.
- a description of guidelines for the protection of special populations in research.
- a definition of informed consent and components necessary for a valid consent.
- a description of the role of the IRB in the research process.
- the roles, responsibilities, and interactions of federal agencies, institutions, and researchers in conducting research with human participants.

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A Service of the National Cancer Institute