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Breast cancer: Relationship between acculturation and barriers to breast cancer screening in Southwest Florida Latinas

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Breast Cancer:
Relationship Between Acculturation and Barriers
to Breast Cancer Screening in Southwest Florida Latinas

by

Patricia Patino

A thesis to be submitted in partial fulfillment
of the requirements for the degree of
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ABSTRACT

Despite multiple campaigns by the American Cancer Society, reports indicate that Latinas living in the United States who contract breast cancer are more likely than Anglos to die. These findings correlate with low participation in breast cancer screenings among Latinas. The objective of this study was to identify key obstacles that influence Latinas’ low participation in breast cancer screenings, based on their health beliefs, knowledge of screenings, acculturation, and socio-economic factors.

The study was a face-to-face informal interview, combined with a survey questionnaire conducted at churches, social clubs and/or at the participants’ homes in a southwest Florida urban community. The sample consisted of a total of 50 women: all of the participants were Latinas 40 years of age and over; they had to be fluent in Spanish or English or both. A Spanish-English bilingual individual conducted a personal interview in the preferred language of each participant. The first part of the interview was to identify barriers that affect screenings. The second part used a survey to weigh the identified factors in order to determine their importance to the participants’ health.
decisions. This study used a health belief model scale to evaluate women’s beliefs about breast cancer, and the benefits of screenings.

The research results revealed that Latinas who participated in this study were acculturated to the United States culture; the largest group of participants reported being from Colombia, followed by Cuba and Puerto Rico; only two of the participants were Mexican. Seventy-eight percent of the participants self-reported having yearly mammograms, and 74% performed monthly breast self-examination BSE; 60% were bilingual; 68% had some kind of health insurance. These results differ from earlier studies from the western United States where the majority of Latinas were of Mexican or Central American origin. This suggested that Latinas from Southwest Florida are different from Latinas in other areas of the United States. A weak but significant correlation was found between acculturation and perceived barriers to breast cancer screenings, \( r = 0.45, p = .01 \); Latinas who are more acculturated perceived more barriers than those who are less acculturated. There was not significant difference between participants who had health insurance and those who did not \( t = 0.96, p = .35 \).

The results of this study are significant for nurses and especially for advanced practice nurses, who can assess patients’ knowledge about cancer in general, and breast cancer in particular when caring for Latinas; of particular concern should be the evaluation of patients’ levels of acculturation, health beliefs, and understanding of the English language. Still the fundamental barrier to Latinas not bilingual in Spanish and English may be the lack of resources and information in Spanish.
Chapter I  Introduction

Despite relatively low rates of breast cancer incidence among Latina women in the United States, incidence of mortality rates from breast cancer are higher than those for Anglo-American women (American Cancer Society [ACS], 2006-2008). Breast cancer is the most commonly diagnosed cancer among Latinas; an estimated 14,300 Hispanic women are expected to be diagnosed annually (ACS, 2005-2008). Although breast cancer is diagnosed approximately 40% less often among Latinas, it is frequently diagnosed at a later stage than in non-Hispanic women (ACS, 2002). Historically lower utilization of cancer screenings, such as mammography, may contribute to later diagnosis when the disease is more advanced (O’Brien et al., 2003).

These differences seem contradictory, but they indicate a wide gap in U.S. healthcare. Higher mortality rates were persistently reported in relationship to Latinas’ low participation in breast cancer screenings when compared to that of Anglo-American women. Healthcare providers have been astounded by these reports because in spite of educational and screening programs, Latinas’ rates of participation remain low. The ACS (Lobell, et al., 1998) recognizes lack of participation in breast cancer screenings as related to diagnosis at more advanced states of the disease for Latina women and relatively high mortality from the disease (ACS, 2006-2008).

While Latinas seem to have a relatively lower susceptibility to breast cancer, the disease does not actually discriminate among races, and all women are at risk of developing breast cancer (ACS, 2006). In fact, the American Cancer Society (2006) reported that breast cancer is the most common cancer among women in the United
States. Estimates by the Cancer Statistics Presentation, 2004, predicted that 192,200 U.S. women of all races would be diagnosed with breast cancer in 2005; 40,200 women were expected to die.

This healthcare issue is compounded by population growth rates. According to the United States Census (2005), the Latin population is growing at a rate more than three times the growth of the total U.S. population. During one year, July 2003 through July 2004, the U.S. Latin population grew by 36%, or 2.9 million people (U.S. Census Bureau, 2005).

**Statement of the Problem**

The problem, then, is clearly identifiable. The healthcare gap for screening, early diagnosis, and treatment of breast cancer in Latina women may be related to acculturation and other barriers that can be assessed through research. The key barriers discourage or prevent this segment of the U.S. population from participation in breast cancer care screenings that can save their lives. With the accelerated growth in the Latin population in the United States, the need to isolate and address the barriers to Latinas’ participation gains greater significance to the nursing profession (Wochna et al., 2005).

While research literature recognizes differences between cultures as obstacles to participation, the educational and screening programs developed to date have not decreased the differences in participation between Latina and Anglo-American women. Researchers in the nursing profession are thus challenged to identify and overcome key obstacles to participation through research. Such research is feasible because it involves isolating particular health perceptions. For instance, susceptibility may involve Latinas’
perceptions that a woman cannot have breast cancer if she is not sick or that the disease may be a divine punishment. In other words, a woman will not participate in breast cancer screening if she believes that cancer afflicts only the ill and the bad. (Salazar, 1996).

The research would also include variables of relative levels of acculturation, socioeconomics, and socio-linguistics. Good access to healthcare depends on accurate information, and many Latina women are not familiar with the risk factors because the information is not oriented to them culturally and because inadequate translation changes the meaning of some ideas. Limited proficiency in the language used by healthcare providers also has been identified as a barrier to cancer screening. Non-Spanish speaking healthcare providers may be inconsistent in finding ways to provide information, perhaps believing it will not be understood anyway. Lower levels of acculturation may contribute to lack of knowledge and affect screening practices (O’Malley, et al. 1999). The purpose of the study was to identify if there is a relationship between acculturation and perceived barriers to participation in breast cancer screening for Latinas over 40 years of age.

Research Questions

The following research questions are addressed in this study:

1. Is there a significant relationship between acculturation and perceived barriers to participation in breast cancer screening among U.S. Latinas?

2. Is there a significant relationship between availability of insurance and perceived barriers?


**Definition of Terms**

The following terms are defined for the purpose of this study:

1. *Perceived barriers*: perceived emotional, physical, or structural concerns related to mammography behavior (Champion, 1999)

2. *Perceived susceptibility*: perceived beliefs of personal threat or harm related to breast cancer (Champion, 1999)

3. *Acculturation*: “the psychosocial adaptation of persons from their culture or origin to a new or host cultural environment” (Marks et al., 1987, p. 2)

4. *Hispanic/Latino*: a federal designation used in national and state reporting systems. For purposes of this study, the term *Latina* is defined as a woman who identifies herself as of Central American, Cuban, Mexican, Puerto Rican, South American, or Spanish origin. In the U.S. Census 2000, the question on Hispanic origin asks respondents if they are Spanish, Hispanic, or Latino; as a consequence, *Hispanic* may be of any race.

**Significance to Nursing**

The irony of the modern healthcare system is how poorly it delivers knowledge at a time when society enjoys unprecedented access to information. Language barriers may exist between healthcare providers and patients, but perhaps a greater barrier is the lack of knowledge regarding Hispanic/Latina health beliefs (Oliver-Vasquez et al., 1999).

The American Cancer Society (2005) recognizes that Latinas have the lowest participation in breast cancer screenings and a higher mortality from breast cancer than U.S. women as a whole; therefore, it is imperative that advanced practice nurses expand
and implement programs to focus on the fastest growing U.S. minority. The goal is to close the gap, create awareness, and increase Latinas’ participation in breast cancer screenings since early detection of breast cancer leads to a better prognosis. This study may enlighten healthcare providers and help us break down the barriers.
Chapter II  Review of Literature

This chapter presents the background significant to the problem being studied. First, the conceptual framework is presented, followed by a review of research relevant to the barriers that may influence Latinas’ participation in screenings, especially in breast cancer screenings. Finally, literature related to Latinas’ perceived barriers to breast cancer screenings is reviewed. This is followed by a summary.

Conceptual Framework

The Health Belief Model (HBM) (Champion, 1993) was used for this study as one conceptual model. The HBM is often applied to breast screenings (Champion, 1993; Foxall, Barron, & Hauck, 1997). This HBM theorized that health behaviors are based on the following concepts: barriers, confidence, health motivation, seriousness, susceptibility, and health motivation. The hypothesis underlying Champion’s HBM states that women’s health beliefs about cancer influence participation in breast cancer screenings. Latinas’ acculturation, not language alone, is perceived as a barrier to obtaining mammograms; the longer a women lives in the United States, the more likely she is to participate in screenings, because she becomes more acculturated (O’Malley, et al., 1999). Women who have access to free screenings are also more likely to participate in screenings (Mendalblatt et al., 2005). Finally, women who have clear understanding and knowledge of breast cancer will be more confident in participation in breast cancer screenings (Hansen et al., 2005).
In addition, the Acculturation Rating Scale for Mexican Americans (ARSMA) establishes a framework for understanding health behaviors, and it has been used to assess acculturation as a perceived barrier related to healthcare (Cuellar & Maldonado, 1995). The hypothesis underlying ARSMA is that more acculturated women have more time to assimilate health practices and may have greater likelihood and opportunity of participating in breast self-examinations and breast cancer screenings. The ARSMA theorized that health behaviors are based on the following concepts: length of time in the United States, language, ethnic identity, and ethnic interactions.

Barriers are defined as perceived emotions, physical, or structural concerns related to mammography behaviors (Champion, 1999). In an interesting article by Wochna and Buschy (2005) addressed barriers that interfere with cancer screening in women. Barriers are classified as systematic and human. System barriers are issues that include communication difficulty, low income, and lack of transportation, insurance, and/or a primary care physician. Human barriers include lack of knowledge, low educational levels, fear of the actual screening tests, and cultural and socioeconomic barriers. Both system and human barriers can influence healthcare behaviors of women relative to cancer screening, and both kinds of barriers must be addressed in efforts to eliminate health disparities.

**Empirical Literature**

In a randomized controlled trial, Mendarblatt et al. (2005) examined three factors: Latinas’ perceived risk of contracting breast cancer, knowledge about clinical screenings, and relative levels of acculturation. These were major barriers to the intent of
participation in the Study of Tamoxifen and Raloxifen (STAR trial). The sample consisted of women at high risk of breast cancer (Mendalblatt et al. 2005). The sample was divided into two groups: the first group was given a simple education counseling session consisting of a 5-to-10 minute presentation delivered by non-physician study staff. The study staff used an informational brochure, from the National Surgical Adjuvant Breast and Bowel Project (NSABP) about the STAR Trial, which was available in both Spanish and English. The control group was given only the brochure without any presentation by staff. The outcome variable was intent to enroll in screening; the intent was evaluated using responses that women might, probably, or definitely would participate if eligible versus would not participate, unsure, or refused to participate. The ten predictor variables included perceived breast cancer risk calculated from the Gail model, as follows: clinical screening knowledge; general knowledge about breast cancer; education (high school or less, or beyond high school); acculturation (country of origin and language); insurance (any or none); age; marital status; language of the interview (Spanish or English); prior mammography (never, ever, or recent > 2 years); and general health (excellent, very good, or good, versus fair, poor, or very poor). Perceived risk was defined by responses on a Likert-type scale. Knowledge of the nature of clinical screening was assessed by the correct answer to multiple-choice questions. Language acculturation was based on responses to three items: language used at home, in speaking, and in thinking. (Mendalblatt et al., 2005).

The study conducted by Mendalblatt et al. (2005) concluded that Latina women are interested in participation in clinical screenings to prevent breast cancer although interest declined as side-effect discussion increased. These findings have important
implications as Latina women overestimated their risk of developing breast cancer. Education about breast cancer and their perceived risk in screenings may increase participation. The barriers of language and accessibility to healthcare, more than acculturation, need to be addressed by healthcare providers.

**Health Beliefs**

Smiley, McMillan, Johnson and Ojeda (2000) addressed the importance of educational programs to increase cervical and breast cancer screenings among Hispanic women. This study evaluated whether health beliefs and Health Locus of Control (HLOC) of Florida Hispanics, as compared to non-Hispanic Caucasian women, influence participation in breast cancer screening. A convenience sample was chosen from multiple settings to ensure inclusion of women of all ages from both ethnic groups. The participants who were contacted by telephone were addressed in their preferred language. If the women agreed to participate in the study, the questionnaires were sent in their preferred language, or handed out at the local site. A demographic instrument was used to describe the sample. The Health Screening Questionnaire (HSQ) was used to collect self-reported data about health beliefs related to breast cancer, and health locus of control was measured with Wallston’s HLOC instrument, a 16-item scale.

Each sampling instrument was translated into Spanish. The Deyo Scale, a four-item tool, measured whether individuals were most comfortable with the Spanish or English language, and Cronbach’s alpha was applied to both the English version and the revised Spanish version. The sample was divided into two groups. The first group was
composed of 57 Spanish-speaking women with a mean age of 54.6 years, (SD = 14.9). The second group was composed of 56 English-speaking women with a mean age of 47.4 years, (SD = 12.9) (Smiley et al., 2000).

This study by Smiley and colleagues (2000) showed that low levels of education, lack of knowledge, and acculturation were related to low participation in cancer screenings by Hispanic women. The results showed that Hispanic women were significantly more likely (p = 0.007) than non-Hispanic women to believe that health is a matter of luck. Hispanic women were more likely to worry (p = 0.001) about their health. Non-Hispanic women also reported feeling more susceptible to both cervical (p = 0.044) and breast cancer (p = 0.000). Taken all together, these results suggest that the Hispanic women in the sample felt less in control of their health than did Caucasian women (Smiley et al., 2000).

Several studies recognize lack of health promotion and education as barriers to participation for minorities, in particular for Latinas. Hansen, Feigl, Modiano, Lopez, Escobedo, Moinpour, Pauler and Meyskens (2005) conducted a community-based pilot study with three objectives, to: 1) assess the feasibility of recruiting and training Hispanic female cancer survivors to perform as healthcare educators in a promotora role, that is, a bilingual female Hispanic lay health educator; 2) determine whether the promotoras, after training, are willing to contact female friends and relatives to share information about cervical and breast cancer screenings; 3) determine whether women obtain a Pap smear or mammogram after receiving cancer-screening information from a promotora.
This study by Hansen and colleagues (2005) was conducted at a San Antonio Minority-Based Community Clinical Oncology Program (CCOP), and the sample was selected from a private oncology practice. Women of Hispanic origin older than 18 years with prior history of cancer were eligible. Spanish- and/or English-speaking women who were willing to complete the training course and serve as promotoras were encouraged to enroll in the study.

Twenty-two patients were invited to attend an orientation night designed to introduce the study purpose and role of the promotora (Hansen et al. 2005). Of those invited, six consented to participate, and five were trained as promotoras during a 12-week course. The workshop focused on curriculum content, transportation, personal safety issues, and theoretical and practical considerations in giving health information to Hispanic women. Two Hispanic female health educators were hired to conduct the Promotora Training Course (Hansen et al., 2005).

In the study, five promotoras contacted 141 women (number ranged from 24 to 49 per promotora), to share cancer-screening information. After contact with a promotora, 50 Hispanic women obtained screenings: 21 underwent mammography (ages 25 - 58), and 43 received a Papsmear (ages 23 - 62). Documentation of screening examinations was either through postcards returned by the patient or through review of the community health clinic records (Hansen et al., 2005).

This study failed to differentiate between women who obtained breast and cervical screenings after the contact with promotoras and women who intended to participate prior to contact. This study was also limited by its small sample size, lack of comparison or control group, and the inability to track screening tests at low-cost or other
health clinics. Research has indicated that social support, a central component of the promotoras’ interventions, is an important predictor of breast screenings.

Several studies focus their research on knowledge of screenings and knowledge of breast cancer risk in multicultural and multi-ethnic populations. In their study of possible barriers to Mexican-American women’s participation in cancer screenings, Lobell, Bay, Rhodas, and Keske (1998) addressed knowledge of cancer, access to healthcare (economic availability), and anxiety about cancer. The sample consisted of 188 Mexican-American women who participated in a face-to-face structured interview in their preferred language. A multiple-choice survey was administered by a promotora, a bilingual female Hispanic lay health educator. The median age of respondents was 28 years (mean = 36); the mean age at first childbirth was 20.3 years; and the mean number of children was 3.6. Of the sample, 69.4% had been or were currently married. The median annual income was between $10,000 and $15,000; and 36.7% were currently employed. The median level of education was reported as some high school, and 43.6% reported being able to read English. Of the sample, 98.4% spoke Spanish and 50% of the respondents spoke only Spanish. Therefore, 68% of the interviews were conducted in Spanish, the language preferred by the respondent (Lobell et al., 1998).

In the Lobell et al. (1998) study, 75% of the respondents had had a pelvic examination, but only 53% reported having a Pap smear. Of the subjects, 84% had performed breast self-examination, but only 39% reported doing so monthly or more frequently (p < 0.001). This study implies that access to healthcare precedes positive screening behavior. Anxiety may lead to decreased screening, but education about cancer and screenings decreases anxiety. Knowledge of risk factors among women of different
socioeconomic and ethnic backgrounds can be an obstacle for participation in breast cancer screenings. In a descriptive cross-sectional study in the San Francisco Bay Area, Katapodi and Aouizerat (2004) focused on identifying knowledge of breast cancer risk in a mixed community. The sample was composed of 184 women who had never been diagnosed with cancer, ages 30 to 85 years (mean = 47 ± 12) who agreed to complete a questionnaire in English. Of the women in this study, 43% were of European descent, 27% of African descent, 16% of Asian descent, and 14% of Hispanic descent. As many as 49% were college graduates; and 24% had a median annual family income of $30,000 to $50,000. Age, race or culture, education, income, employment status, health insurance status, and marital status were assessed with single-item questions from the Behavioral Risk Factors Surveillance System (Center for Disease Control and Prevention, 2002). For this study, the participants were divided into four family-histories-of-cancer groups; 1) no family history; 2) one or more family members affected, second-degree relative(s); 3) one affected, first-degree relative; and 4) multiple affected family members. For the breast cancer risk factors, the researchers used the Gail model that includes age of menarche, age of first full-term pregnancy, and number of breast biopsies (Katapodi & Aouizerat, 2004).

With five items from the Gail model, the researchers defined women’s knowledge of breast cancer risk factor as the total number of situations recognized that increased the probability of developing breast cancer. Items answered affirmatively were summed to calculate each women’s score for knowledge of breast cancer risk factors and to create the Breast Cancer Risk Factor Knowledge Index (BCRFKI) with scores ranging from 0 to 13 (Katapodi & Aouizerat 2004).
The results showed no significant differences among women of different races or cultures. Women of European descent were more likely to have more education than women of African and Hispanic descent. Women of Asian descent were more likely to be more educated than African women but not more than Hispanic women (p = 0.001). Education was significantly correlated with income only for women of African descent (r = 0.50, p = 0.001). The implications for nursing are that the women depend on their primary healthcare providers for risk assessment. During counseling and education, advanced practice nurses can incorporate the calculations of a woman’s risk for breast cancer by using an appropriate risk assessment mode. In this study, researchers excluded Hispanic women from the community who spoke only Spanish (Katapodi & Aouizerat 2004).

Yabroff and Mandalblatt (1999) performed a meta-analysis of well-designed patient target interventions designed to increase adherence with mammography. The researchers used OVID with MEDLINE (1980-1989) to identify published English language articles on interventions to increase mammography utilization. Of the articles, 48 patient target studies met the criteria: four of these studies were subsequently eliminated because they lacked concurrent control groups. Three other studies were eliminated because the interventions were not described in sufficient detail for classification. Finally, a total of 41 studies were included. Data were classified cognitively, behaviorally, or sociologically. Among the 41 studies in the final sample, there were 63 distinct interventions to increase mammography utilization: a) 27 behavioral interventions; b) 21 cognitive interventions; c) 9 sociological interventions; and d) 5 interventions using both cognitive and behavioral strategies. Researchers found
that most interventions do increase rates of screening. Behavioral interventions increase screenings by 12.2% compared with usual care; by 13.0% when using multiple strategies; and by 5.6% when using a single intervention (Yabroff & Mandelblatt, 1999).

As a result overall, behavioral interventions, theory-based cognitive interventions, and sociological patient targeted interventions appear to be effective in increasing mammography utilization, particularly when compared with usual care. Multiple behavioral interventions and interactive theory-based cognitive interventions are effective when compared with action control. In addition, the effectiveness of different types of interventions in patient subpopulations, such as minority or low-income women, and the cost of providing these interventions are critical areas for research in decreasing the morbidity and mortality associated with breast cancer (Yabroff & Mandelblatt, 1999). The study by Yabroff and Mandelblatt (1999) failed to recognize whether cultural sensitivity was included in any of the patient target studies; thus further research is needed in this area.

Vasquez, Ayendez, Perez, Almodovar, and Calderon (2002) conducted a pilot study of health promotion programs. The sample for this study was selected from a senior center that offers services to a low-income, elderly Puerto Rican population. Ninety-four women were invited to participate; 32 met the following criteria: 1) not having performed at least one of the breast cancer early detection practices; 2) completion of the pretest and post test; 3) attendance at two or more educational sessions; and 4) possession of the necessary mental and auditory capacity as evidenced in an initial interview (Vazquez, et al., 1998). In this study, the average age of participants was 78.1 years (± 7.4), and their average schooling was 4.9 years. As regards access to healthcare,
75% received Medicare, Part B, and 81.3% received Medicaid, which covers mammography.

For the educational sessions, the sample was divided into two groups: Group A consisted of 20 women; Group B consisted of 12. The education program was designed to be held in three sessions of 45 to 60 minutes each. Approximately 70% of the women attended each educational session in each group, and 50% participated in all three educational sessions. The four-year project provided insight into personal knowledge, skills, attitudes, demographics, and external barriers (healthcare system). The program’s activities were coordinated with the government senior centers, the local center for diagnosis and treatment (CDT) and the regional hospital. A summary of the project was presented to primary care health professionals at selected sites and published in newspapers for the community’s information (Sanchez-Ayendez et al., 1998).

The program evaluation was based on a systematic approach that assessed all the elements affecting the achievements of the proposed goal. Data was collected four times: before, during, and after the health education sections, and 16 to 18 weeks after the end of the health education sessions. Short-term achievement was determined by changes in knowledge, beliefs, and breast self-examination (BSE) skills. Pre-tests and post tests on knowledge and health beliefs about breast cancer and an observation check list were administered (Suarez Perez et al., 1998).

The evaluation of educational sessions indicated that this intervention did not have the anticipated effect on clinical breast cancer examination or mammogram compliance. In fact, this study shows that breast cancer screening programs should include not only relevant information about breast cancer risks and early detection
benefits but also information about barriers to preventive care that result from a variety of factors: beliefs, attitudes, and other personal characteristics; the healthcare infrastructure and failure of physicians to perform preventive strategies (Vazquez et al., 1998).

**Acculturation**

Acculturation has been defined as the psychosocial adaptation of persons from their culture of origin to a new or host cultural environment (Marks et al., 1987). Several studies have recognized language, ethnicity, and/or acculturation as barriers influencing Latinas’ participation in breast screenings. When Latinas migrate to the United States from their native countries, they become acculturated to the U.S. mainstream lifestyle to varying degrees. Some retain their traditional beliefs and health practices, but others become more acculturated and in many cases more educated. Thus, healthcare providers must be careful not to stereotype patients (O’Malley et al., 1999). Most studies concluded that breast cancer screening and self-examination are very important to the early diagnosis and treatment of breast cancer. The studies also recognized some cultural and racial barriers to screening participation for minorities. Other studies also recognized socioeconomic factors, health beliefs, and acculturation as obstacles. The following studies focus on acculturation.

In a descriptive study of cancer incidence, Eschbach, Mahnken, and Goodwin (2005) investigated whether cancer incidence among Hispanics increased with residential and economic assimilation into mainstream culture. Data from the Surveillance Epidemiologist and End Results (SEER) instrument were collected to investigate the Hispanic cancer advantage by examining the spatial distribution of lung, colorectal,
prostate, female breast, and cervical cancer. Another source, U.S. Census Bureau data collection, was used to estimate the population from which the cancer cases were derived. The study compared neighborhoods that are densely populated by low-income Hispanics to neighborhoods that are less populated with higher-income Hispanics.

Results showed that the incidence of breast, colorectal, and lung cancer increased as the percentage of Hispanics in the census increased, and as income increased. For example, in contrast to the Hispanics in the highest income levels, the high-density Hispanic neighborhoods in the lowest income levels showed 38% fewer incidences of breast cancer and 38% fewer incidences of male colorectal cancer (Eschbach, Mahnken, & Goodwin, 2005). To sum up, the substantial increases in cancer incidence among Hispanics living in ethnically heterogeneous neighborhoods and higher-income neighborhoods suggest that the Hispanic population will lose its advantage in cancer mortality as it becomes more acculturated. (Eschback, Mahnken, & Goodwin, 2005).

A New York City study by O’Malley, Kerner, Ayah, and Mendalblatt (1999) investigated whether acculturation was associated with breast screenings and mammograms. This study’s sample represents women from the four largest Hispanic subpopulations of New York City as of 1992: Puerto Rican 49.5%; Dominican 19.1%; Colombian 5%; and Ecuadorian 4.5% (O’Malley et al., 1997). The sample was selected from the telephone exchanges for all five boroughs of New York City. A random digit-dialed technique was used to ensure coverage of households with unlisted numbers of the four ethnic groups.

For this study, the groups were divided by ages: 18 to 44 years; 45 to 54 years; 55 to 64 years; and 65 to 74 years. Community leaders reflecting the cultural backgrounds of
the population were involved in the study design and survey promotion. The instrument was developed with existing national survey items and then modified for use in the target populations. The participants could choose to be interviewed in Spanish or English (Solis, Marks, & Garcia, 1990).

The acculturation measure was a continuous variable based on a 12-item scale, which was drawn from a 26-item acculturation measure (Cronbach alpha = .93). The 12 items asked about language and media use (television, radio, books, magazines, newspapers) in Spanish and English, in a variety of situations (work, home, neighborhood, shopping), and with different people (spouses or partners, children, parents, friends). For the 12 items, there were 5 response options, as follows: 1 = only Spanish; 2 = mostly Spanish; 3 = Spanish and English; 4 = mostly English; and 5 = only English. An acculturation measure with a 26-item scale was developed by Burnan et al. (1987) and later validated, in a shortened form, in a New York City Hispanic population by Epstein et al. (1999).

The acculturation level was calculated as a mean score of these 12 items (1 = least acculturated; 5 = most acculturated) (O’Malley, et al., 1999). This New York City study concluded that 7 factors were significant: 1) relative acculturation; 2) having a usual source of healthcare; 3) having a relatively higher income; 4) having health insurance; 5) immigrating to the United States before the age of 16; 6) spending a greater proportion of one’s life in the United States; and 7) use of English for the interview. Each of these factors was statistically significant in association with greater participation in breast screenings and mammography (O’Malley et al., 1999). This study concluded that recentness of immigration was associated with screening and was strongly co-linear with
acculturation, thus suggesting that targeting programs to areas with a high proportion of recent immigrants may be a useful way to reach less acculturated Hispanic women (O’Malley et al. 1999).

*Summary*

Lower levels of acculturation may contribute to lack of knowledge and affect screening practice. This situation, combined with limited proficiency in the language used by healthcare providers, has also been identified as a barrier to cancer screenings. Unless healthcare providers are able to communicate effectively, Latinas will not possess all the information they need to make intelligent health promotion decisions (O’Malley et al., 1999).

Although cancers are the second leading cause of death in the developed world, Hispanics have lower incidence and mortality rates for the cancers that cause the most deaths, including breast cancer. Despite these facts, Latinas have a higher breast cancer rate and mortality than non-Hispanic Caucasians (ACS, 2004). Significant increases in breast cancer incidence among Latinas suggest that this population will lose the battle to cancer as long as acculturation and socioeconomic barriers remain unrecognized and unaddressed. Thus, research should focus on isolating and breaking down specific barriers to Latinas’ participation in breast cancer screenings. Additional studies should continue to focus on all variables of the Health Belief Model (O’Malley et al., 1999).

A number of studies have documented the fact that Hispanics tend to use health services less than other ethnic groups. This situation demonstrates the need to continue in efforts to understand the specific concerns of Latinas, and a number of studies do
examine issues important to Latinas. However, the great diversity within the Hispanic community is frequently overlooked and deserves further study.
Chapter III   Methods

This chapter outlines, in four sections, the research methods for this study. The first section describes the sample, its selection, size, inclusions, and exclusions. The second section describes the Health Belief Model (HBM) scale, ARMSA II, and their validity and reliability. The third section covers research procedures, including protection of human subjects. The fourth and final section contains the description of data analysis.

Sample and Setting

Participants in the study were Hispanic/Latina women from a small multicultural community of Southwest Florida, recruited from churches and socio-cultural clubs. Fifty women, 40 years of age and older, were included in this study. Participants had to be able to read and understand English, Spanish, or both. Religion and socioeconomic background were not exclusionary criteria. Finally, Latinas with a history of breast cancer were excluded from the study.

Instrumentation

Health Belief Model Scale

Three instruments were used in this study: the Barriers Subscale of the HBM scale, the ARMSA II scale, and a Demographic Data Form. All the instruments were translated into Spanish to ensure conceptual equivalence. To measure concepts for this study, the revised (1999) Champion Health Belief Model (HBM) scale was used.
Consent for use of this instrument was obtained (Appendix B), and the author gave permission to revise it as necessary.

The HBM has had the greatest influence in research related to prediction associated with breast cancer screening behaviors; several studies have used the HBM model to understand breast cancer screening behaviors. The HBM model subscales measure six concepts, including perceived susceptibility, health motivation, barriers, benefits, confidence, and seriousness (Champion 1999). All scales were measured on a five-point Likert type scale with the following coding: strongly disagree (1); disagree (2); neutral (3); agree (4); and strongly agree (5). Only the barriers subscale was used in this study.

Validity and Reliability. HBM scales for measuring beliefs related to breast cancer were assessed for content validity by a panel of three nationally known judges familiar with the HBM and breast cancer screenings. Scales were revised based upon analysis for content validity and administered to a probability sample of 581 women participating in a large intervention study. The Health Belief Model subscale for barriers (HBM) measure perceived barriers to breast cancer screening. The subscale has six items. Validity was examined using LISREL (Champion, 1998). This analysis confirmed structure of the subscales. Reliability was evaluated for the subscale using Cronbach’s alpha. Subscale alphas ranged from .75 to .88. A few items from the HBM instrument (e.g., barrier items) were modified to improve clarity and cultural sensitivity (Champion, 1998).
The Acculturation Rating Scale for Mexican Americans (ARSMA) developed by Cuellar et al. (1995) has 20 questions scored on a five-point Likert type scale ranging from 1 = Mexican/Spanish to 5 = Anglo/English (Appendix C). Dimensions include: language familiarity and usage, and ethnic interaction differentiated into five types with the following scale: 1) very Mexicano; 2) Mexican-oriented bicultural; 3) true bicultural; 4) Anglo-oriented bicultural; 5) very Anglicized. Consent for use of this instrument was obtained (Appendix D).

The ARSMA II scale measures acculturation along three primary factors: language, ethnic identity, and ethnic interactions. ARSMA II is a multidimensional scale that measures orientation toward Mexican culture and Anglo culture independently using two subscales, a Mexican-orientation subscale (MOS) and an Anglo-orientation subscale (AOS). The MOS has 17 items and an alpha coefficient of .88; the AOS has 13 items and an alpha coefficient of .83. The word Mexican was changed to Latinos to accommodate the mixed population in this sample.

Acculturation scores can be used as continuous measures or to categorize subjects into different levels of acculturation. ARSMA II (Appendix C) was slightly modified for this study by the researcher. The word Mexican was changed to Latino to accommodate the mixed population in this sample. The scale includes these three items: 1) place of birth; 2) years living in the United States; and 3) use of language, that is, ability to read and understand English, and the language used at home and at work.
Demographic Data Form

Data were collected to describe the sample using a Demographic Data Form. This Form included the following: age, educational level, marital status, and health insurance coverage (Appendix E).

Procedures

Permission (Appendix F) was obtained from the church leaders and those in charge of the community centers where data was collected. Approval from the Institutional Review Board of the University of South Florida for the protection of human subjects (Appendix G) was obtained. All participants received written information about the study’s purpose in their preferred language (Appendix E). Those expressing interest in volunteering for the study were informed that participation was voluntary and that no remuneration was to be given to participants by the researcher. To ensure the understanding of those volunteering to participate, questions were answered before participants completed filling out the forms. The researcher interviewed fifty Latinas from the Southwest Florida community in churches, cultural clubs, or in their homes.

Data Analysis

Data was analyzed to answer the research questions. A Pearson correlation was used to answer Question 1, “Is there a significant relationship between acculturation and perceived barriers to participation in breast cancer screening among U.S. Latinas?” Data was analyzed using an independent test to answer Question 2, “Is there a significant
relationship between availability to insurance and perceived barriers?” Demographic
data were analyzed using descriptive statistics.
Chapter IV  Results, Discussion, and Conclusions

This chapter represents outcomes of the study. It begins with a presentation of the results, including the demographic data, and then continues with results related to each research question. The results are followed by a discussion of the study’s strengths and weaknesses, and finally, implications for future research.

Results

Descriptive Data

The study group (n = 50) consisted only of Latina women, ages 40 years and older, with a mean age of nearly 59 years. Years living in the United States self reported by participants ranged from 1 to 50. Approximately 24% of participants had lived in the United States 5 years or less; 42% had lived in the United States more than 15 years (Table 1).

Table 1

| Participant Age-Range & Years Lived in U.S, with Means & Standard Deviations |
|-----------------------------|------------|----------------|
| Number  | Mean      | Standard Deviation |
| Subjects | 50  |                  |
| Subject Age | 58.8 | 6.97            |
| Years in U.S. | 15.6 | 13.52          |
All of the participants were fluent in Spanish; 40% of them spoke only Spanish, and 60% were bilingual, speaking both Spanish and English (Table 2). The participants’ level of education was not included in this study.

Table 2

*Frequency & Percentage of Participants by Language Spoken*

<table>
<thead>
<tr>
<th>Language(s)</th>
<th>Number</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spanish</td>
<td>20</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>English/Spanish</td>
<td>30</td>
<td>60.0</td>
<td></td>
</tr>
</tbody>
</table>

Overall, 22% of the Latinas in this study did not have yearly mammograms; 78% reported having yearly mammograms (Table 3).

Of the participants, 26% reported not doing a monthly self-breast examination (SBE); 74% reported that they do perform monthly SBE (Table 4).

Table 3

*Frequency & Percentage of Participants Having Annual Mammogram*

<table>
<thead>
<tr>
<th>Mammogram</th>
<th>N</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>22.0</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>39</td>
<td>78.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 4

Frequency & Percentage of Participants Performing Monthly SBE

<table>
<thead>
<tr>
<th>Self-Breast Exam</th>
<th>N</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>13</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>37</td>
<td>74.0</td>
<td></td>
</tr>
</tbody>
</table>

A total of 32% of participants reported having no health insurance. However, the majority (68%) did have some kind of health insurance (Table 5).

Table 5

Frequency & Percentage of Participants With & Without Health Insurance

<table>
<thead>
<tr>
<th>Health Insurance</th>
<th>N</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>32.0</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>34</td>
<td>68.0</td>
<td></td>
</tr>
</tbody>
</table>

Regarding country of origin, approximately 26% of the study’s 50 participants reported being from Colombia, and 18% from Puerto Rico. A little less than 30%, distributed nearly equally, reported being from Cuba, Ecuador, or Venezuela. Smaller numbers reported being from Costa Rica, the Dominican Republic, Guatemala, Honduras, Mexico, Peru, and Uruguay (Table 6).
Table 6

*Frequency & Percentage of Participants by Country of Birth (N = 50)*

<table>
<thead>
<tr>
<th>Birthplace</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colombia</td>
<td>13</td>
<td>26.0</td>
</tr>
<tr>
<td>Puerto Rico</td>
<td>9</td>
<td>18.0</td>
</tr>
<tr>
<td>Cuba</td>
<td>5</td>
<td>10.0</td>
</tr>
<tr>
<td>Ecuador</td>
<td>4</td>
<td>8.0</td>
</tr>
<tr>
<td>Venezuela</td>
<td>4</td>
<td>8.0</td>
</tr>
<tr>
<td>Santo Domingo</td>
<td>3</td>
<td>6.0</td>
</tr>
<tr>
<td>Peru</td>
<td>3</td>
<td>6.0</td>
</tr>
<tr>
<td>Guatemala</td>
<td>3</td>
<td>6.0</td>
</tr>
<tr>
<td>Mexico</td>
<td>2</td>
<td>4.0</td>
</tr>
<tr>
<td>Uruguay</td>
<td>2</td>
<td>4.0</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>Honduras</td>
<td>1</td>
<td>2.0</td>
</tr>
</tbody>
</table>

For the Latina subscale, the mean of the total barriers score was 16.3, and the standard deviation was 4.0. For the Anglo subscale, the mean score was 13.5 and the standard deviation 4.5.

The highest two barrier scores were “Lack of privacy for BSE,” with a mean score of 3.64 (SD = 1.61) and “Mammogram will be painful,” with a mean score of 3.34 (SD = 1.11). The lowest barrier scores were “Doing BSE, worry about cancer” (i.e., that doing BSE would make the participants worry about cancer being a fatal disease), with a mean score of 2.80 (SD = 1.16) and “BSE will be embarrassing,” with a mean score of 2.76 (SD = 1.27) (Table 7).
Table 7

Means & Standard Deviations of Barriers Item Scores of Latina Women (N = 50)

<table>
<thead>
<tr>
<th>Item Barrier</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of privacy for BSE</td>
<td>3.64</td>
<td>1.61</td>
</tr>
<tr>
<td>Mammogram will be painful</td>
<td>3.34</td>
<td>1.11</td>
</tr>
<tr>
<td>Feel funny doing BSE</td>
<td>3.20</td>
<td>1.60</td>
</tr>
<tr>
<td>Mammogram takes too much time</td>
<td>3.04</td>
<td>1.06</td>
</tr>
<tr>
<td>Mammogram, worry about cancer</td>
<td>2.98</td>
<td>1.22</td>
</tr>
<tr>
<td>BSE takes too much time</td>
<td>2.94</td>
<td>1.15</td>
</tr>
<tr>
<td>Mammogram costs too much</td>
<td>2.90</td>
<td>1.71</td>
</tr>
<tr>
<td>Doing BSE, worry about cancer</td>
<td>2.80</td>
<td>1.16</td>
</tr>
<tr>
<td>BSE will be unpleasant</td>
<td>2.80</td>
<td>1.30</td>
</tr>
<tr>
<td>Mammogram will be embarrassing</td>
<td>2.78</td>
<td>1.16</td>
</tr>
<tr>
<td>BSE will be embarrassing</td>
<td>2.76</td>
<td>1.27</td>
</tr>
</tbody>
</table>

Barriers and Health Insurance

The majority of the participants had health insurance (n = 27; mean barriers = 114.7); some had no health insurance (n = 15; barriers mean = 104.9). The scores in the independent t-Test scale showed no significant difference (Table 8).

Table 8

Independent t-Test Comparing Women With & Without Health Insurance in Their Perceived Barriers Scores

<table>
<thead>
<tr>
<th>Insurance</th>
<th>N</th>
<th>Mean</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barriers</td>
<td>No</td>
<td>15</td>
<td>104.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>27</td>
<td>114.7</td>
<td>-.96</td>
</tr>
</tbody>
</table>

31
Barriers and Acculturation

This study’s objective was, first, to determine whether there is a significant relationship between acculturation and perceived barriers to participation in breast cancer screening among Latinas. The resulting Pearson correlation coefficient was weak but significant ($r = 0.45, p = .01$). Two subscales from the ARMSA II were used to evaluate acculturation. For the Latina subscale, the mean was 70.4 (possible range of 17-85) with a standard deviation of 10.7 and a median of 72.0. For the Anglo subscale, the mean was 44.9 (possible range of 13-65) with a standard deviation of 9.6 and a median of 47.9 (Tables 9 and 10).

Table 9

*Descriptive Statistics of Participants: ARSMA II, Using Two Subscales, LOS & AOS, to Assess Acculturation of Participants (N = 50)*

<table>
<thead>
<tr>
<th></th>
<th>Latina Subscale</th>
<th>Anglo Subscale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>70.42</td>
<td>44.94</td>
</tr>
<tr>
<td>Median</td>
<td>72.00</td>
<td>47.00</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>10.72</td>
<td>9.64</td>
</tr>
</tbody>
</table>
Table 10

*Correlation Using Subscale Scores, LOS & AOS, with the Barriers Scores to Assess Acculturation of Participants*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latina</td>
<td>50</td>
<td>.24</td>
<td>NS</td>
</tr>
<tr>
<td>Anglo</td>
<td>50</td>
<td>.38</td>
<td>.006</td>
</tr>
</tbody>
</table>

Discussion

*Descriptive Data*

This study found Latinas in Southwest Florida to be different from other Latinas in the United States. The participants in this study were acculturated; they participate in breast cancer screenings. The majority have health insurance. Regarding country of origin, approximately 26% of the study’s 50 participants reported being from Colombia; 18% from Puerto Rico. And a little less than 30%, distributed nearly equally, reported being from Cuba, Ecuador, or Venezuela. Smaller numbers reported being from Costa Rica, the Dominican Republic, Guatemala, Honduras, Mexico, Peru, and Uruguay. This study is different from earlier studies done in the western United States where most of the Latina participants were of Mexican or of Central American origin. Other studies have also recognized differences between acculturation and region of origin of the participants: for instance, Lowell et al. (1988) found that in 188 Mexican American women, chi squared sub (111) = 292.3; P<0.001.
Barriers and Acculturation

This study analyzed the relationship between acculturation and perceived barriers to low participation in breast cancer screenings, that is, yearly mammograms and self-breast examination (SBE), by Latinas in a small Southwest Florida geographical area. Two subscales from the ARMSA scale were used to assess acculturation among participants. For the Latina subscale, the median was well above the midpoint 51 (possible range of 17-85). For the Anglo subscale, the median was above the midpoint 44.9 (possible range of 13-65). The correlation between the barriers scores was weak but significant; this result suggests that Latina women who were more acculturated to the U.S. culture perceived more barriers to breast cancer screening than the less acculturated women did. It is possible that Latinas who are more acculturated may have more exposure to outside influences such as health care providers, schools, and the media, while the less acculturated may not have the same exposure. It is also possible that the ARMSA scales may not be suitable for this group.

Barriers and Health Insurance

Another interesting finding in this study was that there was no difference in perceived barriers between Latinas who had health insurance and those who had none. However, when asked if having a mammogram would cost too much money, most of the participants responded “agree.” It is possible that the Latinas who agreed that a mammogram would cost too much are the same minority of Latinas (32%) who did not have health insurance. In any case, this study’s findings reveal important aspects to be
considered in the designs of health promotions and health interventions aimed at increasing breast cancer screening participation for the 32% who did not have health insurance: to make breast cancer screenings accessible to Latinas in hopes of decreasing mortality among those with breast cancer diagnoses.

Furthermore, some women in this study self reported that doing a BSE would make them worry about cancer. Most women believed that breast cancer is a fatal disease and feared dire consequences should they be diagnosed. Many participants said that if diagnosed, they would feel depressed because a diagnosis of breast cancer would be akin to a death sentence.

Latinas’ knowledge base about cancer in general and breast cancer in particular appears to be formed through a complex combination of information acquired formally (e.g., through schools, healthcare settings), and through informal social contexts (e.g., family, acquaintances). These dynamics point to the critical importance of educating women about the high cure rates associated with early detection of the disease. Still, the fundamental barrier for Latinas not bilingual in Spanish and English is the lack of resources and information in Spanish.

**Limitations to the Study**

The study sample (n = 50) was limited to a small number of Latinas from one geographic area, in which many former Colombians live. Thus, the sample may not be representative of all Latina women in Florida. It is common practice to assume that Spanish-speaking people are all the same, but on the contrary, cancer risk factors and occurrence vary among Latinas because of regional, behavioral, and genetic differences.
Latinas also differ widely in degree of acculturation, socioeconomic status, place of origin, and health beliefs. In addition, the sample for this study was not randomly selected and thus allows for self-select bias. It is possible that women who consented to complete the forms were also those who tended to participate in breast cancer screenings.

An unexpected finding from the study was that Latinas in the study group do perceive barriers to breast cancer screenings.

The evidence of this study is significant to nursing and to healthcare providers since any language barrier is one of the major obstacles for communication between patients and healthcare providers. The results suggest that nurses and other healthcare providers may be able to make a difference in the participation of Latinas in breast cancer screenings to promote early detection of breast cancer by helping them to overcome perceived barriers. To do so, nurses must attain a higher level of cultural awareness than now exists. Health care providers should teach Latinas that most breast cancer can be cured if detected early. It is vital that healthcare providers explain the advantages of early detection; in caring for Latinas, healthcare providers should teach Latinas that most breast cancer can be cured if detected early. It is also important to assess patients’ language skills and evaluate their individual health beliefs and levels of understanding about breast cancer. Healthcare providers should also teach and recommend SBE and mammograms in a way that Latina patients can understand. Further, information about community screening resources must be available and understandable. Communication skills tap not only technical ability to understand and be understood but also the patients’ willingness to assert themselves.
Conclusion

This study suggests a significant positive relationship between acculturation and perceived barriers to breast cancer screening for Latinas in southwest Florida. It also suggests that Latinas who are more acculturated to the United States culture perceived more barriers to breast cancer screening than the less acculturated women did. Important to the study is that Latinas in Southwest Florida are different from other Latinas living in the United States, in that a majority of the study participants were acculturated, participated actively in breast cancer screenings, and had some kind of health insurance.

Several participants, however, identified specific cultural barriers that they felt interfered with participation in breast cancer screenings. Embarrassment at revealing their bodies was a strong barrier for some but not for others. Some participants reported feeling funny about performing BSE; others said they still find it difficult to touch their breasts. These women were taught as children that one’s body is most sacred, that it is a sin to touch oneself or reveal one’s body to another person.

One recommendation about ways to motivate women to obtain breast cancer screenings is to create and incorporate educational health promotion programs that take into account women’s cultural and social realities. Other studies have recognized the lack of health promotion as barriers to participation for minorities, particularly for Latinas. For instance, Henson et al. (2005) reported that minorities who have access to community resources have a greater opportunity to participate in breast cancer screenings. Information about breast cancer screening should be not only readily available but also equitable among various U.S. populations.
In spite of the limitations, findings of this study have implications for educational programs aimed at increasing Latinas’ breast cancer screening rates. Programs should be inclusive of Latinas’ perceptions in order to be successful. Efforts to work with women’s cultural beliefs, rather than ignoring or educating away their perceptions, are more likely to influence them positively.

**Implications for Research**

Recommendations: This study can be replicated or used as a foundation for further research focusing on a larger sample that includes Latinas from a wide range of places of origin, to better represent Latinas from all over the United States. Another interesting element for further research would be to include education and religion as perceived barriers to Latinas’ low participation in breast cancer screenings.

All breast cancer research results are important to the nearly 200,000 women of all origins diagnosed with breast cancer, and particularly to those 40,000 women who die each year with breast cancer. The unequal burden of breast cancer among Latinas presents a significant healthcare dilemma and an important challenge to our nation.
References


Appendices
Appendix A: English HBM & Spanish Translation

Benefits and Barriers for Mammography

1. When I get a recommended mammogram, I feel good about myself.
   1. Strongly disagree  
   2. Disagree  
   3. Neutral  
   4. Agree  
   5. Strongly agree  

2. When I get a mammogram, I don’t worry as much about cancer.
   1. Strongly disagree  
   2. Disagree  
   3. Neutral  
   4. Agree  
   5. Strongly agree  

3. My doctor or nurse will praise me if I obtain the recommended mammogram.
   1. Strongly disagree  
   2. Disagree  
   3. Neutral  
   4. Agree  
   5. Strongly agree  

4. Having a mammogram or x-ray of the breasts will help me find lumps early.
   1. Strongly disagree  
   2. Disagree  
   3. Neutral  
   4. Agree  
   5. Strongly agree  

5. Having a mammogram or x-ray of the breasts will decrease my chances of dying from breast cancer.
   1. Strongly disagree  
   2. Disagree  
   3. Neutral  
   4. Agree  
   5. Strongly agree  

6. Having mammogram or x-ray of the breasts will decrease my chances of requiring radical or disfiguring surgery if breast cancer occurs.
   1. Strongly disagree  
   2. Disagree  
   3. Neutral  
   4. Agree  
   5. Strongly agree
Appendix A (Continued)

7. Having a mammogram will help find a lump before it can be felt by myself or a health professional.
   4. Agree  5. Strongly agree

8. Having a routine mammogram or x-ray of the breasts would make me worry about breast cancer.
   4. Agree  5. Strongly agree

9. Having a mammogram or x-ray of the breasts would be embarrassing.
   4. Agree  5. Strongly agree

10. Having a mammogram or x-ray of the breasts would take too much time.
    4. Agree  5. Strongly agree

11. Having a mammogram or x-ray of the breasts would be painful.
    4. Agree  5. Strongly agree

12. Having a mammogram or x-ray of the breasts would cost too much money.
    4. Agree  5. Strongly agree
Appendix A (Continued)

Health Belief Model Scales for Measuring Beliefs Related to Breast Cancer

(1) Strongly agree  
(2) Disagree  
(3) Neutral  
(4) Agree  
(5) Strongly disagree  
(1) Estoy fuertemente de acuerdo  
(2) No estoy de acuerdo  
(3) Neutral  
(4) Estoy de acuerdo  
(5) Estoy fuertemente en desacuerdo

Barriers to Breast Self Examination (BSE)
Barreras para hacerse examen del seno

I feel funny doing breast self examination  
Me siento chistosa examinándome los senos  

Doing breast self examination during 
the next year will make me worry about breast cancer 
hacerme yo misma el examen de los senos 
me preocuparía acerca de cancer del seno.

Breast self examination will be 
embarrassing to me 


Examínarme los senos me daría vergüenza

Doing breast self examination will 
take too much time. 

Examinarme los senos tomaría mucho tiempo

Doing breast self examination 
will be unpleasant 

Examinarme los senos no ser agradable

I don’t have enough privacy to do 
breast self examination 

no tengo suficiente privacidad 
para examinarme los senos
Barriers – Mammogram.
Barreras para la mammografía

Having a routine mammogram or x-ray of the breast would make me worry about breast cancer
Hacerme la mammografía o rayos x rutinariamemnt me preocuparía por el cancer del seno

Having a mammogram or x-ray of a breast would take too much time
Hacerme la mammografía o rayos x tomaría mucho tiempo

Having a mammogram or x-ray of the breast would be embarrassing
Hacerme la mammografía o rayos x sería vergonzoso

Having a mammogram or x-ray of the breast would be painful
Hacerme la mammografía o rayos x de los senos sería doloroso.

Having a mammogram or x-ray of the breast would cost too much money
Hacerme la mammografía o rayos x de los senos cuestaría mucho dinero

1998 Victoria L. Champion
Spanish translation Patricia Patino, RN, BSN
October 17, 2005

Ms. Patricia Patino
1927 SW 31 Terrace
Cape Coral, FL 33914

Dear Ms. Patino,

Thank you for your interest in my work. Enclosed is the instrument 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,

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

VC:dg

Enclosure
Appendix C: English ARSMA-II-Scale 1 & Spanish Translation

ARMSA-II-Scale 1

<table>
<thead>
<tr>
<th>5</th>
<th>Almost Always/Extremely Often</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Much/Very Often</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Moderately</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Very Little/Not very Much</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>Not at all</td>
<td>5</td>
</tr>
</tbody>
</table>

| 1. I speak Spanish             | (1) | (2) | (3) | (4) | (5) |
| 2. I speak English             | (1) | (2) | (3) | (4) | (5) |
| 3. I enjoy speaking Spanish    | (1) | (2) | (3) | (4) | (5) |
| 4. I associate with Anglos     | (1) | (2) | (3) | (4) | (5) |
| 5. I associate with Mexicans and/or Mexican American | (1) | (2) | (3) | (4) | (5) |
| 6. I enjoy Spanish language music | (1) | (2) | (3) | (4) | (5) |
| 7. I enjoy listening to English language music | (1) | (2) | (3) | (4) | (5) |
| 8. I enjoy Spanish language TV | (1) | (2) | (3) | (4) | (5) |
| 9. I enjoy English language TV | (1) | (2) | (3) | (4) | (5) |
| 10. I enjoy English language movies | (1) | (2) | (3) | (4) | (5) |
| 11. I enjoy Spanish language movies | (1) | (2) | (3) | (4) | (5) |
| 12. I enjoy reading books in Spanish | (1) | (2) | (3) | (4) | (5) |
| 13. I enjoy reading books in English | (1) | (2) | (3) | (4) | (5) |
14. I write letters in Spanish......................... (1) (2) (3) (4) (5)
15. I write letters in English ......................... (1) (2) (3) (4) (5)
16. My thinking is done in the English language......................... (1) (2) (3) (4) (5)
17. My thinking is done in the Spanish language......................... (1) (2) (3) (4) (5)
18. My contact with Mexico has been....................... (1) (2) (3) (4) (5)
19. My contact with the USA has been....................... (1) (2) (3) (4) (5)
20. My father identifies or identified himself as “Mexicano”......................... (1) (2) (3) (4) (5)
21. My mother identifies or identified herself as “Mexicana”......................... (1) (2) (3) (4) (5)
22. My friends while I was growing up were of Mexican origin ......................... (1) (2) (3) (4) (5)
23. My friends while I was growing up were of Anglo origin ......................... (1) (2) (3) (4) (5)
24. My family cooks Mexican foods ......................... (1) (2) (3) (4) (5)
Appendix C (Continued)

(5) Almost Always/Extremely Often
(4) Much/Very Often
(3) Moderately
(2) Very Little/Not very Much
(1) Not at all

25. My friends now are of Anglo origin................. (1) (2) (3) (4) (5)
26. My friends now are of Mexican origin............. (1) (2) (3) (4) (5)
27. I like to identify myself as an Anglo American........................................ (1) (2) (3) (4) (5)
28. I like to identify myself as Mexican American........................................ (1) (2) (3) (4) (5)
29. I like to identify myself as Mexican............... (1) (2) (3) (4) (5)
30. I like to identify myself as American .............. (1) (2) (3) (4) (5)

©1995, Cuéllar, Arnold & Maldonado

Since the population I am aiming are not all of Mexican descendents I changed (Mexican to Latinos)
**Appendix C (Continued)**

**ARSMA –II Scale 1**

Translation to Spanish

(5) Casi siempre/Extremadamente frecuente  
(4) Mucho/ Muy frecuentemente  
(3) Moderadamente  
(2) Muy poco/No mucho  
(1) No nunca

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<table>
<thead>
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</thead>
<tbody>
<tr>
<td>1. Hablo Espanol &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hablo Ingles  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Me gusta hablar Espanol  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Tengo amigos Americanos  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Tengo amigos latinos/latino Americanos  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Me gusta oir musica en Espanol  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Me gusta oir musica en Ingles  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Me gusta ver television en Espanol  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Me gusta ver television en Ingles  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10. Me gusta ver peliculas en Espanol  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Me gusta ver peliculas en Ingles  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Me gusta leer libros en Espanol  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>13. Me gusta leer libros en Ingles.  &amp; 1 &amp; 2 &amp; 3 &amp; 4 &amp; 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


14. Yo escribo cartas en Español
15. Yo escribo cartas en Inglés
16. Pienso en Inglés
17. Pienso en Español
18. Mi contacto con mi país de origen ha sido
19. Mi contacto con los Estados Unidos
20. Mi papá se identifica como Latino
21. Mi mamá se identifica como Latina
22. Mis amigos de la infancia eran Latinos
23. Mis amigos de la infancia eran Anglos
24. Mi familia cocina comida Latina
25. Mis amigos son de origen Anglo (Americano) 1 2 3 4 5
26. Mis amigos son de origen Latino 1 2 3 4 5
27. Me gusta identificarme como Latino/Americano 1 2 3 4 5
29. Me gusta identificarme como latino 1 2 3 4 5
30. Me gusta identificarme como Americano

Spanish Translation: Patricia Patino, RN, BSN

Since the population I am aiming are not all of Mexican descendants I will like to change (Mexican to Latino/a)
Appendix D: Consent to Use ARSMA II

From: permissions permissions@sagepub.com
To: Patricia P <patriciaone@earthlink.net>
Subject: RE: AARSMA II
Date: Feb 14, 2006 10:44 AM

Dear Patricia,

Thank you for your request. Please consider this written permission to use the scale detailed below for use in your thesis.

Thank you,

Malia

Malia Shanks
Permissions Administrator
Sage Publications, Inc.
2455 Teller Road
Thousand Oaks, CA 91320
P: 805-410-7133 F: 805-375-1722

-----Original Message-----
From: Patricia P <patriciaone@earthlink.net>
Sent: Tuesday, February 14, 2006 8:41 AM
To: permissions
Subject: AARSMA II

My name is Patricia Patino; I am a Nurse practitioner student at the University of South Florida. As part of my graduation fulfillment I have to do a thesis

My thesis is on Breast Cancer in Latinas: Obstacles to Screening for Early Detection.

I need to use a tool to measure Acculturation, one that I found I think I can use is the ARSMA_II by Cuellar, I Arnold, 1 B & Maldonado (1995) Acculturation Rataing Scale for Mexican Americans.II

If you have another scale that I can use for this purpose I’ll appreciate it thank you again.

Patricia Patino, RM.BSN

Email addr. patriciaone@earthlink.net Tel 239 549 39 10
Appendix E: Study Purpose & Demographics Forms

**Purpose of data collection/ Proposito y uso de información**

I'm a graduate student at the University of South Florida; one requirement for graduation is the completion of my thesis. To obtain a Master in nursing (Nurse Practitioner Oncology) the title of my thesis is “Breast Cancer: Relationship between Acculturation and Barriers to Breast Cancer Screening in Latinas. Your participation is on a volunteer basis, and will be greatly appreciated. Please fill out the questionnaire below in the language you feel most comfortable with.

Yo soy estudiante de la University of South Florida para obtener el grado de Nurse Practitioner en Oncología. Master in Nursing, uno de los requisitos para graduarme es terminar mi tesis: “Breast Cancer: Relationship Between Acculturation and Barriers to Breast Cancer Screening in Latinas. Con este propósito, necesito que llene esta planilla. Su participación es voluntaria y será altamente agradecida. Por favor llene en questionario, en su idioma preferido.

### Demographic Questionnaire English/Spanish

<table>
<thead>
<tr>
<th>Age</th>
<th>Place of Birth</th>
<th>Years in the USA</th>
<th>Breast self Exam</th>
<th>Do you have a Mammogram Yearly</th>
<th>Do you have health insurance</th>
<th>Speak English/ and or Spanish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edad</td>
<td>Lugar de Nacimiento</td>
<td>Años en los Estados Unidos</td>
<td>Examen de los senos</td>
<td>Se hace la mamografía todos los años</td>
<td>Tiene seguro Medico</td>
<td>Habla ingles/o Español o los dos</td>
</tr>
</tbody>
</table>

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Appendix E (Continued)

If you have any questions, please free to contact me at the telephone number provided below.
Thank you

Si tiene alguna pregunta pude comunicarse con migo al numero de telefono al final de esta pagina.
Gracias

Patricia Patino, RN, BSN
239-218-3624
Appendix F: Permission to Interview

May 9, 2006

To Whom It May Concern:

My name is Patricia Patino, I am a graduate student at the University of South Florida, and one of the components of the curriculum to obtain a Master Degree is a thesis. My thesis theme is Breast Cancer: Relationship between Acculturation and Barriers to breast Cancer Screening in Latinas.

A very important part of this project is the collection of data. I would like to obtain your permission to interview some of the Latinas in your congregation. The information is confidential and their participation in on a volunteer bases, there is not remuneration involved, and the amount of time for the interview is less than 15 minutes.

Sincerely

Patricia Patino
May 11, 2006

To Whom It May Concern:

This letter gives Patricia Patino permission to interview the Latin Women of our congregation here at Cape Christian Fellowship for the purpose of data collection on her research regarding Latinas breast cancer mammogram and screening thesis.

If you have any questions regarding this matter, please feel free to contact me, Carmen Cortes, at the main office: 239-772-5683.

Thank you,

[Signature]
Carmen Cortes
Administrative Assistant