

DISSERTATION

**THE DESIGN, CONSTRUCTION, AND TESTING OF AN INSTRUMENT TO
MEASURE LATINA'S HEALTH BELIEFS ABOUT BREAST CANCER AND
SCREENING**

Submitted by

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In partial fulfillment of the requirements

For the Degree of Doctor of Philosophy

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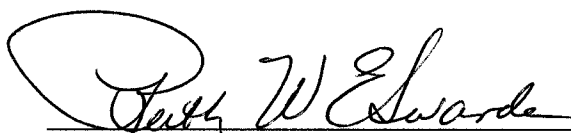
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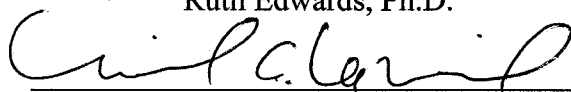
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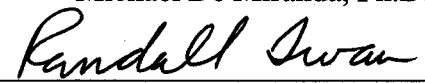
WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY PATRICIA GONZALEZ ENTITLED THE DESIGN, CONSTRUCTION, AND TESTING OF AN INSTRUMENT TO MEASURE LATINA'S HEALTH BELIEFS ABOUT BREAST CANCER AND SCREENING BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.



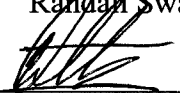
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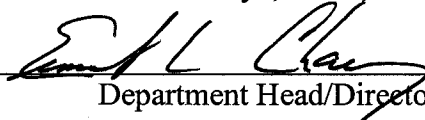
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ABSTRACT OF DISSERTATION

THE DESIGN, CONSTRUCTION, AND TESTING OF AN INSTRUMENT TO MEASURE LATINA'S HEALTH BELIEFS ABOUT BREAST CANCER AND SCREENING

Hispanic women's (Latinas) survival from breast cancer (BC) is lagging behind the survival rates of non-Hispanic white women, possibly due to more advanced stage of disease at diagnosis (Fernandez-Esquer, Espinoza, Torres, Ramirez, & McAlister (2003). Fewer baseline and routine BC screening procedures among Latinas may explain the observed delay in diagnosis. Participation in BC screening is influenced by various socio-demographic, socio-cultural and psychological factors. The purpose of this study was to develop and test the Latina Breast Cancer Screening (LBCS) Scale, which measures cultural health beliefs that might influence Latinas' decision to engage in regular BC screening. More specifically, this study tested the LBCS scale to establish its psychometric properties: the instruments validity and reliability. Content validity was assessed by having a research team review the items for relevancy, accuracy and wording of the items. First, a 60-item and an 80-item version of the LBCS was developed and administered to 288 Latinas. Next, principal components analyses and reliabilities aided in reducing the scale to 36 items. This study was successful at identifying six distinct factors, therefore contributing to the scale's construct validity. Lastly, the LBCS scale was tested with 155 participants to establish its psychometric properties: the instrument's

validity and reliability. The LBCS displayed strong internal consistency. As expected, the LBCS scale was significantly and positively correlated with the Group-Based Medical Mistrust Scale items (i.e., medical mistrust), the fatalism inventory, and the Cultural Health Attributions Questionnaire thus establishing convergent validity. In addition, as predicted traditional scores on the LBCS were significantly and negatively correlated to BC knowledge, thus establishing discriminant validity. This study suggests that the LBCS is a reliable and valid scale to assess cultural BC health beliefs. This study provides a contribution to the literature on Latinas BC beliefs through the development of an instrument that measures cultural health beliefs and norms that past research studies have alluded to but have not been able to measure. In conclusion, BC prevention efforts should focus on increasing awareness among Latinas and medical healthcare providers about cultural health beliefs (i.e., Feeling Healthy, Feeling Indecent, Feeling Threatened) which play an important role in BC screening behaviors.

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Chapter I: Introduction

Breast cancer (BC) is reported to be the most common type of cancer among North American women and the second leading cause of death due to cancer (Austin, Ahmad, McNally, & Stewart, 2002). Breast cancer is one of the most treatable cancers; however, women of color, including Latinas, are dying in disproportionately higher numbers (Fernandez-Esquer et al., 2003). According to data reported by Abraido-Lanza, Chao, and Gates (2005), BC is the primary cause of cancer death among Latinas in the U.S., possibly because of delayed diagnosis due to low rates of BC screening participation. According to Jacobellis and Cutter (2002), Latinas undergo fewer baseline and routine mammogram screenings and have a more advanced stage of BC disease at diagnosis.

Mammography, clinical breast exams (CBE), and breast self examinations (BSEs) are useful BC screening techniques, that if used regularly, can potentially help to detect BC at an early stage, when treatment is more likely to be successful, thereby increasing survival. BC diagnosis at an early stage can increase the 5-year survival rate by 87% (Stage I and Stage II) (American Cancer Society, 2005). Despite the increased emphasis on education to promote awareness of early detection, thousands of women, ethnic minority women in particular, do not participate early or regularly in BC screening procedures (George, 2000). Therefore, it is imperative to investigate factors that may prevent Latina women from participating early and regularly in BC screening procedures

as recommended.

Latinas Breast cancer screening behaviors

The American Cancer Society (ACS) recommends that women 20 years of age and older conduct a breast self exam (BSE) at least once a month. Women in their 20s and 30s should receive a clinical breast exam (CBE) as part of their regular health exam by a health professional at least every 3 years. It is recommended that women age 40 and older have a CBE and a mammogram every year, and should continue to do so as long as they are in good health (ACS, 2005).

BC screening recommendations have been clearly set for all women. Nonetheless, Latinas continue to be screened at lower rates than the target rates established by the Healthy People 2010 initiative. The goal of Healthy People 2010 is to increase the proportion of Latina women (from 61% up to 70%) ages 40 and older who have received at least one mammogram in 2 years. Another goal of Healthy People 2010 is to reduce the BC death rate from 27.9 deaths per 100,000 women to 22.3 deaths per 100,000 women. Improvements in screening rates are evident; in 2003, 65% of Latinas reported having had a mammogram within the past 2 years (National Cancer Institute, 2005). However, Latinas tend to be screened at lower rates than the target rates established by the Healthy People 2010 (Valdez et al., 2001).

Past research suggests that screening behaviors vary by Latina subgroups. For example, Zambrana, Breen, Fox, and Guitierrez-Mohamed (1999) compared BC screening practices (i.e., clinical breast exams) among 5 subgroups of Latinas. The study consisted of 668 Mexican-American women, 537 Mexican, 332 Puerto Rican, 143 Cuban, and 711 other Latina women. For this study women who were 30 years and older

were analyzed for CBE, and women who were 35 and older were analyzed for mammography. Cuban women younger than 50 years of age reported the highest screening rates of CBE (86% versus 83% Puerto Rican, 78% Mexican, 84% Mexican American). Puerto Rican women who were 50 years of age and older had the highest rates of CBE (83% versus 70% Cuban, 62% Mexican, 74% Mexican American). This study demonstrates the importance of examining both overall screening rates and screening rates by Latina subgroups.

Couglin and Uhler (2002) examined BC screening practices among Latinas in the U.S. and Puerto Rico. A total of 15,133 women were interviewed as part of the Behavioral Risk Factor Surveillance System from 1998 to 1999. Approximately 80% of women age 40 and over reported having had a mammogram in their lifetime. Furthermore, approximately 68% reported having received a mammogram in the past 2 years. As noted above, according to the ACS all women over the age of 40 should have a mammogram, but this study found that only 80% reported ever having one and 68% did so in the past 2 years.

Peragallo, Fox, and Alba (1998) conducted a study to assess BC screening behaviors that included BSE, clinical breast exams, and mammograms. Participants consisted of 81 Mexican and 30 Puerto Rican women who had a mean age of 49.5 years. Approximately 68% of the women reported that they performed BSE and 51% reported performing a BSE monthly. About 44% stated that they had received a CBE within the last year, while 74% of the women reported having had a mammogram at least once in their lifetime. Finally, it was found that Puerto Rican women were (30%) more likely to have a consistent mammogram history compared to Mexican women (15%). This study

also points to the underutilization of screening behaviors among Latinas in the U.S and the differences in mammogram utilization by subgroup.

BC screening rates not only vary by Latina subgroups, but also vary across ethnic groups. Tortolero-Luna, Guber, Villarreal, Palos, and Linares (1995) conducted a study with women 35 years old or older to investigate the differences between 233 Latinas and 332 non-Latina white women in cancer screening practices. Overall, Latina women had significantly lower rates (65%) of lifetime mammography use than did non-Latina white women (79%), and were significantly less likely to practice monthly BSEs (37%) than non-Latina women (49%). In addition, Latinas were less likely than non-Latina white women to have ever had clinical breast exams. Therefore, this study provides some evidence to suggest that Latina women in comparison to non-Latina white women are less likely to participate in BC screening procedures.

Aldridge, Daniels, and Jukic (2006) examined the data from the 2002 Behavioral Risk Factor Surveillance System questionnaire to investigate the relationships between demographic and healthcare factors and mammography use among 1,737 Latinas and 64,408 non-Latina White women. It was found that the odds of ever having had a mammogram were similar among Latina and non-Latina White women, after adjusting for age, employment status, and other demographic factors. Higher numbers of Latinas had demographic characteristics that were negatively associated with mammography use. For example, the probability of having had a mammogram was higher if the woman had a personal physician and had some form of healthcare coverage; however Latinas were less likely to have these factors than non-Latina Whites.

Factors Associated with and Predictive of Latinas' Breast Cancer Screening

Several research studies have been conducted to examine the factors that are strongly associated with lack of BC screening among Latinas. Factors such as socio-demographic variables (e.g., socioeconomic status, geographic location, education), socio-cultural variables (e.g., cultural health beliefs, acculturation, social support), and psychological variables (e.g., motivation, attitudes) are among the most investigated. The variables that are pertinent to the current study will be discussed in further detail.

Socio-demographic factors and access factors

Multiple socio-demographic factors have been associated with the lower rates of participation in BC screening activities among Latina women. It is important to examine screening practices among Latinas who have lower income levels and lower educational levels because their screening practices tend to be significantly lower than for Latinas with comparably higher income levels and higher educational levels. Past research has investigated the association between low SES, education, and lack of access to preventive health services and BC screening. One such study, by Fulton, Rakowski and Jones (1995), examined determinants of BC screening among inner-city Latina and other inner-city women. Participants consisted of 505 non-Latina white, 150 non-Latina black and 106 Latinas. Logistic regression analyses were used to identify important predictors of BC screening. It was found that Latinas who were less educated and had lower incomes, were less likely than the women in the other two groups to have a primary care provider, and were less likely to have health insurance. Further, it was found that Latinas (20%) were screened at about half the rate of other respondents.

Valdez and colleagues (2001) examined the relationship between SES and BC

screening participation among 583 low income Latinas from California. BC screening items included date of last mammogram, frequency of BSE, and BC screening intentions. A mammogram performed in the 24-months prior to the study for women ages 40 to 49 years, and 12 months before for women ages 50 years or older, was considered a recent mammogram. Approximately, 82% of these low SES Latinas reported ever having had a mammogram and 58% reported having had a recent mammogram. Again, these rates are below the recommendation by the ACS that all women 40 years of age and older should have a yearly mammogram. Only 58% of women reported having had a recent mammogram. The Healthy People 2010 target is to increase the 61% baseline of Latinas aged 40 years and older who have received a mammogram within the past 2 years to 70%. These findings suggest that SES may play a determining role in whether women obtain mammograms.

In addition, another study by Skaer, Robinson, Sclar and Harding (1996) identified determinants of BC screening among rural, low income Latinas using migrant health clinics. The sample consisted of foreign-born Latinas age 20 or older with no history of breast cancer. Socio-demographic characteristics, frequency of health service utilization, mammography and BSE practices were obtained from this sample. Findings revealed that older women (50+) in this low income population were less likely to have been taught or to engage in preventive health behaviors such as mammograms and BSE. Older women and women with a high concern for costs were also less likely to receive mammograms. As income, education, and length of residence in the U.S. increased, use of services also increased.

Equally imperative is to examine screening practices among women who fall in

different age brackets as age also appears to play an influential role in BC screening practices. Although the ACS recommends that women age 40 and older should have an annual mammogram; there is evidence that not all women over the age of 40 participate as recommended. For instance, Wu, Black, and Markides (2001) investigated mammogram screenings among 1,403 Mexican American women over the ages of 67 years. One goal of this study was to determine if age was significantly associated with screening behavior. Participants were asked if they had ever had a mammogram and responses were coded as either “never” versus “ever” had a mammogram. Findings revealed that the rates of ever having had a mammogram decreased significantly with increase in age. For example, approximately 60% of women ages 75 years and over reported ever having had at least one mammogram, compared with about 70% of those ages 67 to 74 who said they had had one. Therefore, age factors should be taken into consideration when examining patterns of BC screening.

Wu et al. (2001) also investigated how BC screening among older Mexican American women was associated with medical-related factors. Women who reported four or more doctor visits had significantly higher rates of having had a mammogram than women who reported three or fewer doctor visits. In addition, lack of insurance, greater number of medical conditions, history of hysterectomy, and lower number of doctor visits were significantly related to lower screening rates ($p < .01$) among the older women in this sample.

Access to health care is another influential factor related to BC screening. Lack of access to health care is due in part to low SES and lack of health insurance (Aldridge et al., 2006). Minimal attention, however, has been given to medical mistrust as a possible

barrier to BC screening. Medical mistrust refers to the tendency for individuals to distrust the medical system and personnel believed to represent the dominant culture (Thompson, Valdimarsdottir, Winkel, Jandorf & Redd, 2004). Women of color have reported a lack of confidence in medical techniques and procedures. Research suggests that mistrust is influential in the decision to obtain routine medical care (e.g., cancer screening). Thompson et al. (2004) investigated the psychometric properties of a new scale, the Group-Based Medical Mistrust Scale (GBMMS) and its association with cancer screening attitudes and BC screening practices among African American and Latina women. Specifically, it was hypothesized that mistrust would be significantly correlated with BC screening. It was also hypothesized that lower acculturation scores would be significantly correlated with GBMMS scores, such that lower acculturation scores would be associated with higher GBMMS scores. It was found that Spanish language participants tended to report higher mistrust scores compared to other groups. Latinas who reported that their last mammogram was more than 5 years ago or reported no previous mammogram had significantly higher total GBMMS scores compared to other women. Overall, the results support the possible association between medical mistrust and low BC screening among Latinas.

Past research suggests that differences exist in BC knowledge levels based on ethnic/racial group membership (e.g., Black, Anglo, Latina). Carter, Park, Moadel, Clearly and Morgan (2002) investigated cancer knowledge and BC screening practices among 429 African and 851 Latinas. To assess level of cancer knowledge, study participants were asked about their understanding of BC, BC screening methods (i.e., mammography), and the importance of early detection and its role in improving the

chances of BC survival. Latinas reported significantly more knowledge of all screening tests and of the importance of early detection for BC compared with Black respondents. Latinas were more likely to agree with the idea that “once you get cancer you almost always die from it” and “a person over 65 years old cannot get cancer” compared with Black respondents. Overall, over three fourths of all participants indicated that they had knowledge regarding BC cancer screening methods, including the kind of medical procedures involved and the frequency in which they need to be performed. Over 90% reported understanding the importance of early detection and its role in improving BC survival. Logistic regression analyses indicated that the greater lack of knowledge about the definition of cancer and cancer screening procedures, the higher was the risk of not practicing BSE. Results also demonstrated that lack of knowledge about the definition of cancer, cancer screening tests, and the importance of early detection to cancer survival increased the risk of not having had a breast examination by a physician. Finally, results revealed that greater lack of knowledge about cancer screening tests increased the risk of not having had a mammogram.

Knowledge and awareness

It is also crucial to recognize that differences in breast cancer knowledge, attitudes, and screening behaviors can differ by Latina subgroup. Among the major U.S. Latina subgroups, Mexican women have the lowest rates of cancer screening (Ramirez, Suarez, Laufman, Barroso, & Chalela, 2000). Ramirez et al. examined breast cancer knowledge and screening behaviors among four Latina subgroups. Participants consisted of 174 Central American, 279 Cuban, 1,550 Mexican American, and 236 Puerto Rican women. Findings revealed that the percentage of women who reported that they were

knowledgeable about mammography guidelines was lowest among Mexican Americans (58.3%) and highest among Cubans (71.8%). Women who were knowledgeable about mammography screening were 2.5 times more likely to have had a recent mammogram. When knowledge of mammography guidelines and SES factors were controlled for, Central American women were most likely to have had a recent mammogram, followed by Cuban Americans, when compared to Mexican American women.

BC knowledge also seems to differ based on Latinas' length of time in the U.S. Peragallo et al. (1998) examined knowledge of how to perform a breast self examination among 111 Latina U.S. immigrants. Five questions were used to assess basic knowledge of BSE (e.g., Should you examine the area under the arm?; What is the proper position for BSE?). Results revealed that only 22% of women answered all five questions accurately and 44% of the participants were unable to answer any of the five questions accurately. The mean number of questions answered correctly was 2.2 out of 5. Furthermore, it was found that BSE knowledge was a significant predictor of BC screening (i.e., performing monthly BSEs and having mammograms as recommended). It was also found that the likelihood of a woman being a consistent breast cancer screener increased with greater percentage of time lived in the U.S. This study provides further support for the importance of how BSE knowledge and length of time in the U.S. influences whether a woman is likely to engage in breast screenings or not.

Research studies have found evidence to suggest that level of knowledge can influence level of anxiety which in turn can influence BC screening. Lobell, Bay, Rhoads, and Keske (1998) investigated the effect of some of these established predictors of BC screening among 188 Mexican American women. Specifically, the authors tested a

model with four predictors (i.e., communication skills, knowledge of cancer, access to health care, and anxiety about cancer) of BC screening. Data were analyzed using structural equation analyses to control for the effect of all predictors simultaneously. Communication skills and anxiety were significant predictors of screening while statistically controlling for access to health care. Also, both knowledge and communication skills were predictive of anxiety. Specifically, greater knowledge was associated with increased anxiety. All predictors accounted for 65% of the variance in screening behavior.

Socio-cultural factors and screening behavior

More recently, there has been a growing literature focusing on socio-cultural factors as predictors of participation in BC screening activities. Socio-cultural factors are external social and cultural factors that influence women's conceptualization of an illness and of the measures to detect or prevent the illness. For example, social networks, cultural values and beliefs, and acculturation are among the socio-cultural factors that appear to influence BC screening. More specifically, the cultural values and beliefs that seem to influence Latinas' screening behaviors include traditional norms about modesty, attitudes about the family and other cultural traditions, and fatalistic attitudes such as the belief that little can be done to change the course of one's fate (Abraido et al., 2005). These factors have been found to deter Latina women from being screened for breast cancer.

Research suggests that healthy social networks may have a positive influence on cancer screening participation. Suarez, Lloyd, Weiss, Rainbolt, and Pulley (1994) examined the effect of social networks on BC screening practices among 450 low income

Mexican American women aged 40 years and older. Women were assigned a social network score by summing up their responses to six items which included number of confidants, number of close friends, number of close relatives, frequency of contact with close friends or relatives per month, church membership, and church attendance. Findings revealed that women with the highest social network scores were much more likely to have been screened within the past 2 years for BC than women with lower social network scores. Interestingly, the number of close friends was the most important significant predictor of regular mammography utilization. These findings suggest that women with larger social networks may be more informed about cancer screening and have greater access in obtaining screening exams.

It is also necessary to examine if social networks impact women similarly across different Latina subgroups. Suarez et al. (2000) examined the relationship between social networks and cancer screening among Mexican, Cuban, Central American, and Puerto Rican women. Social network was assessed by asking women about number of close relatives and friends, the frequency of the contact, and church membership and attendance. Among Mexican descent women it was found that higher social network scores were significantly related to mammography screening. However, among Cuban, Puerto Rican, and Central American women this relationship was not as consistent. Only among Cuban women did knowledge of guidelines significantly increase with increasing social networks. Therefore, this study demonstrates the complexity of understanding significant predictors of mammography utilization by Latina subgroup.

One component of social networks is the perceived social support that is derived from it. Katapodi, Facione, Miaskowski, Dood and Waters (2002) investigated the

influence of perceived social support on BC screening among 313 Latinas, 286 Caucasian and 234 African American women. Social support refers to an exchange of resources between at least two individuals, the provider and the recipient, with the intention of improving the well-being of the recipient. Social support was measured with 5 items (i.e., “I often do not have anyone to turn to” and “I do not know anyone whom I can confide in”). Results revealed that women who never performed BSE had significantly lower social support in comparison to those women who rarely performed BSE and to those who followed recommended BC screening guidelines. In other words, these findings suggest that women with more perceived social support are more likely to adhere to recommended BC screening guidelines.

Latina’s cultural backgrounds also influence how they think about and behave in their world. One’s cultural background is influenced by a variety of factors such as the customs of one’s homeland, especially one recently arrived from another country, the culture of a peer group, and for the poor, the culture of poverty. Specifically, culture needs to be taken into account when working with Latino immigrant populations because many beliefs regarding health and illness are rooted in the traditions brought from their country of origin and the fact that the majority are of low SES. Overall, health among Latinos is equated with the state of being free of pain and being able to perform one’s daily activities (Baca, 1969). Further, the concept of health and illness for a great number of Latinos is tied closely with one’s relationship to God or a divine being. Belief in destiny leads to a life of submission to God, so any active attempt to alter health events is considered going against God’s will.

Latino’s cultural health beliefs also influence how they view and feel towards

cancer. For instance, Perez-Stable, Sabogal, Otero-Sabogal, Hiatt, and McPhee (1992) investigated beliefs about and attitudes toward cancer among Latinos and Anglos. Focus groups were held with men and women to ascertain their views about the causes of cancer and attitudes toward having and preventing cancer. Findings revealed that Latinos were more likely than Anglos to believe that bruises from being hit, sugar, microwaves, eating pork, breast feeding, eating spicy foods, and antibiotics could cause cancer. Latino's were significantly more likely to report that having cancer is like getting a death sentence, that cancer is God's punishment, that there is little one can do to prevent cancer, and that they would rather not know if they had an incurable cancer. Finally, Latinos and individuals with fewer years of education were significantly more likely than Anglos and more educated individuals to believe that drinking coffee and environmental pollution could cause cancer.

Tortolero-Luna et al. (1995) examined health beliefs among Latinas and non-Latina white women. It was found that Latinas were significantly more likely to agree that illness is a matter of chance or fate and that fast recovery from an illness is a matter of good luck. Furthermore, it was found that Latinas who were 50 years or older were significantly more likely to have a fear of getting cancer than were non-Latina white women in the same age range.

Past research has shown that the construct of acculturation may influence a person's cultural beliefs and views toward cancer. Therefore, acculturation must be taken into account when studying attitudes, beliefs, and behaviors toward cancer among individuals from diverse cultural backgrounds. Acculturation is the individual process of cultural change due to coming into contact with another culture that is different from

one's culture of origin. Acculturation most commonly occurs by the migration of an individual to a different country (Marin, 1992). Acculturation entails both the social and psychological exchanges that individuals experience when they enter a significantly different culture in a new country (Cabassa, 2003). According to Marin (1992), a change in language preference and use indicate a more profound acculturation than knowledge of historical facts. Generally, most Latinos fall into one of three acculturation levels. Low acculturated individuals tend to retain their native cultural practices but refrain from participating in their host country's cultural practices. Bicultural individuals tend to retain their native cultural practices, but incorporate their host culture's practices. Highly acculturated individuals tend to exchange their native cultural customs for those of their host culture.

Acculturation has been found to be related to health behaviors. Palos (1994) argues that knowledge of how acculturation affects attitudes, beliefs, and behaviors toward cancer can provide clues to understanding some of the barriers to cancer screening participation. Specifically, research has found that acculturation may be related to Latinas' BC screening behaviors. Coe et al. (1994) examined the BSE practices of 1,453 Latinas living in Arizona and California. The authors hypothesized that level of acculturation would influence the frequency of BSEs. Acculturation was measured using an abbreviated version of the General Acculturation Index (GAI; Cuellar, Harris, & Jasso, 1980). The GAI is a measure of the acculturation level of respondents and examines their use and preference of language, the location of their early development, their current circle of friends, and their pride in their ethnic background. Results revealed that acculturation level was positively related with whether women performed BSEs,

such that less acculturated women were significantly less likely to perform such examinations.

Peragallo, Fox and Alba (2000) investigated the association between level of acculturation and BSE among 81 Mexican immigrant and 30 Puerto Rican women. It was found that Puerto Rican women were more likely than Mexican women to have a consistent mammogram history. They found that Latinas with higher levels of acculturation were twice more likely to perform a correct BSE than women with lower levels of acculturation. These findings suggest that higher acculturation to U.S. culture is positively associated with correct BSE among immigrant Latinas.

Suarez (1994) also investigated the effects of acculturation on cancer screening behavior. Participants were 450 randomly selected Mexican American women age 40 and older living in El Paso, Texas. Bilingual interviewers used a standardized questionnaire to ask participants questions about demographic characteristics, BC screening practices, and about assimilation and acculturation. Acculturation was measured by using a scale developed by Hazuda, Stern and Haffner (1988). Their multidimensional scale assesses English proficiency, value placed on preserving Mexican culture, attitudes toward traditional family structure and interaction with members of mainstream society. Results suggest that mammogram screening increases with each gain in acculturation on proficiency in English and use. It was also found that Mexican American women with stronger family attitudes screened more frequently. In addition, the strongest predictor affecting mammogram screening was whether participants had health insurance coverage. For instance, women with no health coverage were the least likely to be screened. The positive effect of strong family ties and strong tradition on screening may be explained by

the emotional support or financial support that a family might provide to a woman (Suarez, 1994).

Tortolero-Luna et al. (1995) also found that acculturation was a factor in mammography utilization. Specifically, Latinas who were less acculturated to mainstream U.S. society had the lowest percentage of ever having had a mammogram (27%) and of having had a mammogram within the past year (16%), followed by highly acculturated women and Anglo women. Therefore, this study also suggests that acculturation level influences mammography utilization.

Language preference and use (i.e., proficiency) is among the strongest acculturation variables associated with the screening practices of Latina women. It is believed that English language proficiency facilitates the exposure to health related information which, in turn, may positively influence screening. Austin et al. (2002) reviewed several studies that investigated acculturation variables (e.g., linguistic barriers) believed to influence BC screening among Latina women. Based on the studies reviewed, they concluded that limited proficiency in the language of the host country may serve as a barrier to cancer screening. That is, the inability to speak English fluently interferes with Latina's ability to obtain important BC screening information and communicate with health providers. Women who speak only or mainly Spanish are significantly less likely to be screened for breast cancer (Austin et al., 2002).

Different acculturation scales are utilized to assess acculturation. There is an ongoing debate over which scales are more useful at assessing acculturation. Suarez and Pulley (1995) investigated the usefulness of the utilization of an acculturation scale developed by Cuellar et al. (1980) and an acculturation scale developed by Hazuda,

Stern, and Haffner (1988) in predicting mammography screening. The acculturation scales were compared with each other and their relationship to socio-demographic factors and to participation in cancer screening. Participants included 923 randomly selected Mexican-American women aged 40 years and older living in Texas. The Cuellar et al. abbreviated scale consisted of 8 items which assessed the extent to which Spanish and English were spoken, preferred, read, and written, participants' ethnic identification, and generational status in the U.S. The Hazuda et al. (1988) scale evaluated five dimensions including adult proficiency in English, English versus Spanish use, value placed on preserving Mexican cultural origin, attitudes toward traditional family structure and sex-role organization, and interaction with members of mainstream society. Results demonstrated that 65% of participants had never had a mammogram. Most of the women in this sample had low acculturation levels and used Spanish, identified themselves as being very Mexican, were first generation, mainly interacted with Mexican Americans, and held strong Mexican cultural and family attitudes. English proficiency was found to be a significant predictor of having had a recent mammogram. Women without health insurance or who had only Medicaid or Medicare were the least acculturated. Results also suggested that Hazuda et al's (1988) scale provides a more multidimensional approach than Cuellar et al's scale. Therefore, according to Suarez and Pulley (1995), Hazuda et al's (1988) scale may provide a better measure of the acculturation process.

Psychological factors

Psychological factors are internal individual factors that influence women's conceptualization of BC and BC screening. These psychological factors include constructs such as fear, anxiety, and embarrassment and risk perceptions. In one study by

Stein, Fox and Murata (1991) the role of psychological factors in the use of mammography, while controlling for SES and ethnic group membership was investigated. It was hypothesized that embarrassment, radiation fears, pain fears, cost concerns, and anxiety would be barriers to the use of mammography. Participants consisted of 582 White women, 227 African American women, and 150 Latina women (predominantly Mexican American). In particular, it was found that African American and Latina women were significantly more concerned about pain during a mammogram than White women. Latina women also reported significantly more concern than participants from the other groups about radiation danger from mammography and more feelings of embarrassment due to screening exams by physicians.

Laws and Mayo (1998) also examined psychological factors that may predict screening mammography utilization by urban women in Massachusetts. The purpose of the study was to identify specific factors associated with screening mammography utilization for Latina women age 40 and older. Participants consisted of a total of 390 women: 69% were Latina, 25% were White and 6.4% were African-American. Findings demonstrated that 99% of Latina respondents were born outside the United States. No differences were found between Latina and non-Latina respondents in health related attitudes and practices. Embarrassment was found to be related to modesty, fate, and internal and powerful others. Fatalism was found to be higher among Latinas.

Few studies with Latinas have used theoretical models to investigate the psychological factors associated with their participation. The studies investigating BC screening behavior of Latinas tend to use models such as the Health Belief Model. Although each model provides insights to factors that may predict and improve Latinas

participation in BC screening, all of these approaches overemphasize the role of logical reasoning in health-seeking behavior over the influence of affect, cultural attitudes and beliefs, and reliance on social networks. Thus a need still exists for a model that incorporates these aspects and contributes to build innovative approaches to improve Latinas' BC screening rates.

One approach might be to more thoroughly incorporate Latinas' cultural explanatory models (CEMs) about BC and BC screening to better understand how these influence women's decision making to participate in early BC detection procedures. For Latinas living in the United States, their CEMs of health and illness tend to be influenced both by traditional beliefs that sometimes originate from their country of origin or ancestry and by modern beliefs that, although might be present also in their countries of origin, tend to be dominant in mainstream U.S. society. However, CEMs of traditional Latinas rarely are in accord with the dominant U.S. CEMs, particularly the biomedical model on which the health care system in the U.S. is structured. For example, the biomedical model conceptualizes the decision-making process regarding the adoption of health behaviors as individualistic, autonomous, rational, and purposeful. The biomedical model also assumes that decisions are influenced by risk factors and barriers derived from the epidemiological definition of being "at risk." A discrepancy usually exists between ethnic minority women's CEMs and the biomedical model given differences in risk perceptions. Thus, the discrepancy between systems may result in ineffective health promotion programs for BC screening among ethnic minority women.

Perceived risk associated with the development of an illness has been the focus of attention of a growing body of research. Perceived risk is also one of the factors believed

to influence prevention and detection health behaviors. “Risk” is generally defined as consisting of two components: the likelihood and the severity of negative outcomes or losses (Van der Plight, 1998). Prominent theoretical models incorporate these two components of risk to analyze human decision-making regarding health-related behavior. “Risky” refers to the subjective perception that performing a behavior may involve an unpleasant outcome. For example, the decision to perform a detection behavior such as breast self-exam is perceived as “risky” because by engaging in this behavior one “runs the risk of receiving significant, unpleasant information” (Rothman & Salovey, 1997, p. 5). Most models in the health psychology literature are based on the behavioral decision theory and assume that people’s behavior follows logical and conscious decisions; however, these theories pay less attention to the influence of subjective perceptions, automatic information processing, and habitual behavior.

Considerable variability exists in the degree to which the literature on perceived risks and BC screening is theoretically based. However, theory based research is important to facilitate cross-study comparisons of research findings in this area, and to provide a foundation for the development of effective health promotion programs. Existing theoretical models incorporate the recognition that an awareness of physical risk status or vulnerability is an important condition for adopting health behaviors that reduce this risk (Van der Plight, 1998). Unfortunately, in some instances, measures of perceived risk are negatively related to intention to engage in health behaviors. Recent research shows that the empirical support for the influence of perceived risk or susceptibility on BC screening participation is inconsistent. More clarity and theoretical precision is needed to understand the function of perceived risk on adopting detection health

behaviors. However, in the literature there are no published culturally based theoretical models to understand Latinas' perceived risks related to BC screening in correspondence to CEMs.

Summary and Purpose of the Study

Despite the effectiveness of BC screening procedures in the early detection of the disease, screening rates among Latina women remain low. Participation in BC screening is influenced by various socio-demographic, socio-cultural and psychological factors. For example, women with higher SES, with medical health coverage, who have access to health care, who have larger social networks, and who have higher levels of acculturation are more likely to engage in BC screening activities. In turn, women who have higher levels of medical distrust, higher levels of fatalism, lower levels of acculturation, and have greater anxiety levels are less likely to engage in BC screening activities. However, participation in early and regular BC screening could be promoted among Latinas if education programs were designed to inform and encourage screening practices in a culturally-sensitive and congruent manner so that the specific concerns of Latinas were appropriately addressed (Salazar, 1996). Furthermore, since certain cultural factors can either promote or hinder participation in cancer-control behavior, the medical community must understand how cultural factors might influence women's compliance or noncompliance with screening recommendations (Palos, 1994). Breast cancer remains an illness that cannot be prevented but that if diagnosed at an early stage, it can be treated and controlled. A need exists to continue to investigate which factors are most likely to encourage BC screenings among Latinas, particularly cultural and psychosocial factors which are less understood but which have the potential to be more feasibly and

successfully targeted through education interventions than are systemic and socio-economic barriers.

The proposed study was an attempt to operationally define a theoretical model that accounts for the cultural and psychosocial factors that influence Latinas' BC screening decisions. If these factors can be targeted effectively, sporadic compliance could be reversed and BC screening rates considerably improved. The theoretical model that we intend to test builds on previous studies conducted primarily with Latinas of Mexican descent (Borrayo & Jenkins, 2001a; Borrayo & Jenkins, 2001b; Borrayo, Jenkins, Lawsin, under review) but that has been expanded to incorporate women from other Latino subgroups (i.e., Puerto Rican, Cuban, Central American, and South American; Borrayo, Buki, & Feigal, 2005). The developed theoretical model explains commonalities in beliefs, values, and norms among Latinas who vary by country of origin or ancestry but who share similar cultural constructs.

Guiding Theoretical Framework

Borrayo and Jenkins (2001 a and b) and Borrayo et al. (2005) have used focus groups to interview Latinas to explore their perceptions about screening to detect BC. Grounded theory methods of analysis were used to develop a theoretical model to understand how culturally determined psychological dynamics influence BC screening decisions. According to this model, Latinas generally perceived BC screening as a “risky” behavior. Three factors appeared to shape the amount and type of perceived risks reported by the women: perceptions about the etiology of the illness and its nature (feeling healthy), the behaviors involved in screening for the illness (feeling indecent), and the meaning of its detection (feeling threatened). Screening was perceived as risky

because of the many personal and interpersonal consequences associated with detecting BC. They hypothesize that Latinas' subjective assessment that detecting BC is too risky may cause them to abstain from participating in screening procedures.

Feeling Healthy is characterized by a subjective feeling of well-being and a cognitive perception that they are not at risk of developing BC (Borrayo & Jenkins, 2001a). In essence, to assess whether they "feel healthy," Latinas rely on their traditional health beliefs about BC causality and the nature of this illness. Latinas who are more traditional tend to embrace the perspective that "physical predetermination, detrimental sources, and divine predestination" cause BC. Physical predetermination refers to the view that women who develop BC have a physical predisposition for this illness (e.g., heredity). Similarly, some Latinas believe that if they are predestined to have BC, it is "God's will" or their fate. Another common view is that BC is also caused by "detrimental sources" that are harmful to the body (e.g., physical trauma) and if they have not been exposed to any sources, they tend to perceive not to be at risk to develop BC and thus, do not screen. With regard to beliefs about the nature of BC, one predominant belief is that BC is a "symptomatic illness," and consequently women tend to wait until they experience a BC symptom (e.g., pain, lump), rather than to screen for it when they are still asymptomatic. A second belief about the nature of BC among Latinas is that it is a "fatal illness" and consequently that participating in screening activities would not prevent them from dying even if the illness is detected early. For these reasons, BC screening is appraised as "risky."

Feeling Indecent emerges out of Latinas' cognitive perception that their behavior during the screening examination is inappropriate, with a consequent subjective

experience of embarrassment (Borrayo & Jenkins, 2001b). That is, women viewed BC screening behaviors as counter to their cultural norms about propriety for female behavior and their health care providers' behavior, because it involved touching and exposing intimate body parts like their breast. When these cultural norms are violated through screening, women run the risk of feeling embarrassed. Related to the propriety of women's behavior, two traditional norms emerged as important. The first was "female modesty," which refers to the norm of women's bodily privacy that prohibits them from touching their breasts themselves or allowing other people, particularly men, to touch or see them. Women said, however, that they feel less embarrassed with a female provider because they perceive "female commonality," which refers to a special bond that women feel with other women because females share the same body and the same common experiences. Theoretically, women's perceived risks of screening (e.g., exposing their body, being touched, and being embarrassed) lead them to "feel indecent" and further avoid engaging in BC screening procedures.

The psychological dynamic of "feeling threatened" involves a subjective sense of fear and a cognitive perception of threat due to the anticipated consequences of having BC. Latinas in this study articulated that they are threatened not only by the diagnosis of BC, perhaps because they believe it is a fatal illness, but also by its anticipated treatment. Some Latinas tended to expect that BC would be treated through mastectomy. By losing their breast, these women anticipate running the risk of also losing their "feminine identity." Thus, screening possesses the risk of finding BC, and subsequently feeling at greater risk of death or of breast removal. Due to the threat posed by BC, some Latinas use the mechanism of "denial" to deal with the possibility of a diagnosis and the "just

world” belief in an effort to understand why someone would get BC. In essence, women indicated that they and other women they knew should not get BC because they were all good human beings (e.g., caring, religious, moral) who had not committed any bad deeds to deserve to be punished. At the thought of the possibility of discovering through screening that they had BC, in spite of not deserving it, women expressed “feeling threatened.” Some Latinas, however, expressed that they did want to know if they had BC, in spite of the anticipated threatening consequences. Such women were willing to engage in BC screening in order to be able to treat the illness in time to save their lives, perhaps because these women were more knowledgeable about BC and BC screening, perhaps because they are more educated and acculturated to the dominant medical system than traditional women who perceived the illness to be fatal, regardless of treatment.

The goal of this study was to design, construct, and test an instrument (The Latina Breast Cancer Screening [LBCS] scale) to measure traditional health beliefs that Latinas in previous studies have reported influence their decision to engage in BC screening procedures. This study also examined the relationship of demographic variables (e.g., age, SES, education), acculturation, BC knowledge, cultural attributions, fatalism, and medical mistrust to BC screening practices. The following hypotheses were tested:

Hypothesis 1. Items on the LBCS would distinctly load on three internally consistent factors or subscales (i.e., Feeling Healthy, Feeling Indecent, and Feeling Threatened).

Hypothesis 2. Traditional health belief responses to each of the LBCS factor items would be negatively correlated with acculturation to mainstream U.S. culture (discriminant validity).

Hypothesis 3. Health care provider related items from the feeling indecent construct of the LBCS would be positively correlated with the medical mistrust (GBMMS) items, the fatalism items and the cultural attributions items (convergent validity).

Hypothesis 4. Traditional health belief responses to each of the LBCS factor items would correlate negatively with BCKT's items that tap into medical knowledge (discriminant validity).

Hypothesis 5. LBCS would significantly predict BC screening behaviors, above and beyond socio demographic variables (criterion or predictive validity).

Chapter II: Method

The study was conducted in three consecutive phases: 1) creation and testing of scale items, 2) identification of factor structure, and 3) establishment of the scale's validity and reliability. The first phase consisted of developing the items for the scale and establishing content validity (i.e., inter-rater agreement for the items). The second phase consisted of reducing the number of items to those that best tap into the 3 constructs by using principal components analytic strategies and establishing content validity (i.e., content experts). The third phase consisted of establishing the scale's validity by examining the relationship of the LBCS scale to other established measures (e.g., acculturation, BC knowledge, medical mistrust, fatalism). The third phase also consisted of establishing the scale's reliability by conducting reliability analyses.

Participants

Four hundred and sixty-three Latina women were recruited to take part in all phases of this study. In the first two phases of the study there were 308 (288 for scale development and 20 to pilot test the final scale) participants. There were 155 participants who were recruited for the third phase. All women who were 40 years of age or older, who self-identified as Latina, and who had never had BC were eligible to participate. According to the American Cancer Society, women 40 years of age and older should receive a mammogram every year; therefore, being at least 40 years of age was used as

an inclusion criteria.

Participants who self-identified as Latinas when approached who agreed to participate in the study were asked to report in a socio-demographic questionnaire their Latina origin (e.g., Cuban, Guatemalan, Mexican, and Puerto Rican). Participants were recruited at either health or cultural fairs. It was expected that the majority of participants would be of Mexican descent since 70% of Latinos in Colorado are of Mexican descent (U.S. Census, 2002). As expected, the majority of women who participated in all phases of this study were primarily from Mexico (i.e., 75% in phase II and 69% in phase III). In phase III, a total of 8 women were excluded from the analyses (2 reported having BC, 1 reported being younger than 40, and 5 appeared to provide invalid reports based on the excessive number of contradictory responses. Women who had or had had BC were excluded from participating because this study was interested in the perspectives of women not affected by the disease but who should regularly participate in mammography for screening purposes.

Measures

All instruments were included in one self-report questionnaire. During phase II participants completed a packet containing socio-demographic items, breast cancer screening items and either a 60 item version or an 80 item version of the LBCS. The pilot test self-report questionnaire was 12 pages in length and consisted of the socio-demographic items, breast cancer screening items, the Acculturation Rating Scale for Mexican Americans-II (Cuéllar, I., Arnold, B, & Maldonado, R., 1995), the Breast Cancer Knowledge Tests (BCKT; Stager, 1993; McCance, Mooney, Smith & Field, 1990), the Revised Fatalism Inventory (Mayo, Hunter, & Parker, 2003), the Group-Based

Medical Mistrust Scale (GBMMS; Thompson et al., 2004), and the Cultural Health Attributions Questionnaire (CHAQ; Murguia, Zea, Reisen, & Peterson, 2000). The questionnaire for phase III was 8 pages long and consisted of the socio-demographic items, breast cancer screening items, the General Acculturation Index, the 36-item LBCS, the modified versions of the Breast Cancer Knowledge Test's, the GBMMS, the Revised Fatalism Inventory, and the CHAQ.

Some of the measures had to be modified (i.e., BCKT's, GBMMS, CHAQ) because of the lengths of the questionnaire and in order to bring the literacy level down. Psychometric data was obtained for all measures used in the study. In addition, instruments that were only available in English were translated from English to Spanish, such as the GBMMS, the Revised Fatalism Inventory, and the BCKT's by the researchers prior to data collection.

Socio-Demographics Questionnaire. All participants were asked to respond to 11 socio-demographic questions. Data collected included, age, marital status, income, education, ethnic identification, insurance coverage, and occupation (see Appendix A). Participants were also asked to state their place of birth and length of time residing in the U.S. This information was used to complement information on their possible acculturation level.

Breast Cancer Screening. All participants completed a short survey of nine questions to assess their BC screening behaviors including mammography utilization (see Appendix B). Participants were asked whether they had received a mammogram(s) and a clinical breast exam in the past year, two years, three or more years, or never received one. In addition, participants were asked if they performed monthly breast self

examinations.

Acculturation. Participants who were part of phase II or III of this study completed an acculturation scale. During the pilot test the Acculturation Rating Scale for Mexican Americans-II (ARSMA-II; Cuéllar et al., 1995) was utilized. The ARSMA-II is a 30-item self-report scale designed to assess acculturation processes through a multidimensional approach. The ARSMA-II is capable of generating multidimensional acculturative types, such as integrated (bicultural), assimilated, separated and marginalized acculturation type. The ARSMA-II was administered to participants who were part of the pilot test. However, based on participants' feedback regarding the length of the scale and the difficulty understanding and responding to the scale, possibly due to our study participants' low literacy levels, the ARSMA-II was dropped from the study. In phase III of the study, the ARSMA-II was replaced by the General Acculturation Index, which is a five item scale that includes a five point Likert scale. This scale was modified from a Cuellar et al. (1980) longer Acculturation Rating Scale for Mexican Americans (ARSMA) acculturation scale (Elder et al., 1991). This scale assesses language preference, preferred language to read, the ethnicity of their close friends, and the degree of pride that they feel in their Latino heritage (see Appendix C). Scores can range from five to 25, with higher scores indicating a higher level of acculturation. This scale in the present study was found to display a strong internal consistency ($\alpha = .84$).

Latina Breast Cancer Screening Scale (LCBS). The LBCS measures traditional cultural health beliefs among Latinas. The 60 or 80 item LBCS scale was administered to participants in phase II of the study. The response choices included "yes", "no", and "maybe". In order to test the readability of the scale the Fernandez Huerta formula was

used. The Fernandez Huerta formula is an adaptation of the Flesch Reading Ease which is used to measure readability of English texts. The Fernandez Huerta produces a number that is based on the number of syllables per hundred words and the number of sentences per hundred words in the text. The values generated by the formula correspond to a scale ranging from very difficult to very easy (0-100). For the LBCS 60 item version and 80 item version the readability ease was found to be 92, indicating that it was very easy to read. The reduced 36 item LBCS was administered to participants in phase III of the study. The Fernandez Huerta readability analysis found to have a value of 90.1, falling within the range of very easy. In addition, the 36 item LBCS was found to display strong internal consistency ($\alpha = .93$) (see Appendix D).

Breast Cancer Knowledge Test (BCKT; Stager, 1993). Participants who were part of the pilot test or phase III of this study completed this scale. A woman's general knowledge of BC and her knowledge of BC curability were assessed using Stager's (1993) BCKT. For this study, the BCKT was translated from English to Spanish. The instrument consisted of two subscales, the general knowledge subscale and the curability subscale. The general knowledge subscale measures a woman's knowledge about BC and the curability subscale measures a woman's knowledge about BC treatment. The general knowledge subscale is made up of 12 items. Sample items include "Breast cancer is more common in 65 year old women than in 40 year old women." and "Most breast lumps are cancerous." The curability subscale consists of 8 items. Sample items include "For many women, breast cancer can now be successfully treated without breast removal (mastectomy)" and "Even if detected and treated early, a woman with breast cancer is unlikely to live a normal life span." A random sample of 182 women 50 years and older

was used for Stager's (1993) reliability analyses. The sample consisted of 91% Anglo American women, 5% Native American, 3% Mexican American, .6% Asian American, and .6% other. In order to examine the reliability for this sample of women, Stager (1993) conducted a Kuder-Richardson 20 (Kr20) analysis. The Kr20 analysis for this sample revealed an alpha of .60 for the knowledge subscale and an alpha of .62 for the curability subscale. The total instrument takes approximately six minutes to complete. For the purposes of this study this measure was modified and shortened because some of the items overlapped with those from McCance et al.'s (1990) BCKT (see Appendix E). In this study, one item ("Women in the United States have a higher risk of breast cancer than do women in Asia or Africa") was eliminated from the general knowledge subscale. It was believed that this item might be difficult even for the most educated women. One item ("If all lymph glands around the breast and under the arm are not removed, breast cancer cannot be cured") was also eliminated from the curability subscale because we considered that such an item would have a low ceiling effect given that only women with high health literacy levels and knowledge would be able to answer it correctly. The response options were also modified from "true" and "false" to "yes", "no" and "maybe." Reliability analyses for the BCKT instrument were obtained for the sample in this study. The Cronbach alpha for the overall scale was adequate ($\alpha = .63$). Therefore, the overall BCKT scale was used for additional analyses.

Breast Cancer Knowledge Test (BCKT; McCance, Mooney, Smith & Field, 1990).

Participants who took part in the pilot test or phase III of this study completed the BCKT which was translated from English to Spanish for the current study. While Stager's (1993) BKCT measure assessed BC knowledge and curability, McCance et al.'s. (1990)

BCKT assessed women's knowledge about BC screening procedures such as mammography and breast self-examination. The original measure consists of 18 items. A sample item includes "Most breast lumps are found by a) women themselves, b) physician, c) mammogram". McCance et al. (1990) used a convenience sample of 101 women over 50 years of age to examine the scale's reliability. The sample consisted of 92% Anglo women, three Native American, two Spanish, and one black. Reliability for this sample was calculated by conducting the *Kr20* score. McCance et al. (1990) found a $Kr20 = .81$ for the 18 item scale among their sample of participants. The measure takes approximately 10 minutes to complete. Because some questions were irrelevant in this study, this scale was reduced from the original 18 items to 12 items (see Appendix F). In addition, the response choices were changed from "true", "false", and "don't know" to "yes", "no", and "don't know" after we piloted the BCKT and participants appeared to have difficulty answering in a 5-point Likert-type format. Reliability analyses for the BCKT instrument were obtained in the present study using the Cronbach alpha statistic because it is comparable to the KR20 statistic which is used for nominal variables. The BCKT displayed low internal consistency, ($\alpha = .55$). Therefore, due to the low reliability this scale was dropped from the regression analyses.

The Group-Based Medical Mistrust Scale (GBMMS; Thompson et al., 2004).

Participants who were part of the pilot test or phase III of this study completed the Spanish translated version of this scale. The GBMMS is a 12 item scale that measures mistrust or suspicion of mainstream health care systems and health care professionals and of the treatment provided to individuals who belong to the respondent's ethnic group. Participants were asked to respond using a Likert-type scale ranging from 1 (strongly

disagree) to 5 (strongly agree). Sample items are, “I have personally been treated poorly or unfairly by doctors or health care workers because of my ethnicity” and “People of my ethnic group cannot trust doctors and health care workers.” A total of 168 (79 African American, 89 Latina) women age 18 and older were included in Thompson et al’s (2004) reliability analyses. Thompson et al. (2004) found the internal consistency for the total GBMMS was high ($\alpha = .83$). Reliability coefficients for the subscales were .80 for Factor 1, .76 for Factor 2, and .55 for Factor 3. For purposes of this study, the GBMMS was reduced from 12 items to 5 items (see Appendix G). From a previous pilot study, we found that women from the target population tend to have difficulty with Likert type scales. Therefore, we modified the responses to include either “yes”, “no” or “maybe”. From a previous pilot study, we found that women from the target population tend to have difficulty with Likert type scales. Reliability analyses for the GBMMS instrument for this study’s sample were obtained and it was found to display low internal consistency ($\alpha = .28$) suggesting that these items did not constitute a scale. Therefore, the scale as a whole was dropped from the regression analysis, but for the validity analyses the individual items from the GBMMS were used.

Revised Fatalism Inventory (Mayo et al., 2003). Participants who were part of this study completed the Spanish translated version of this scale. The revised fatalism inventory is an 11-item scale that measures fatalistic beliefs (i.e., BC is inevitable). Sample items include, “I believe if someone gets breast cancer it was meant to be” and “I believe if someone gets breast cancer that’s the way they were meant to die”. Mayo et al. found the internal consistency with a sample of participants from Ghana to be adequate ($\alpha = .76$). For this study, we modified the inventory by reducing it from 11 items to 8

items (see Appendix H). The response option of “maybe” was added to the “yes” and “no” options in case women were unsure of the answer. This scale displayed adequate internal consistency ($\alpha = .75$).

Latino Cultural Health Attributions Questionnaire (CHAQ). Participants who were part of phase III of this study completed the Spanish translated version of this scale (Murguia et al., 2000). The CHAQ is a 24-item scale that identifies two types of equity attribution beliefs that reflect the use of retributive justice to health outcomes (e.g., just world beliefs). Equity attributions include the notion that there is justice according to natural law or the just world hypothesis (Murguia et al., 2000) (i.e., good deeds deserve rewards and bad deeds deserve punishment). The first type of equity attribution was the internal control construct (e.g., she deserved it for being good to her community) and the second was the powerful others control construct (e.g., God was testing her faith). The scale also taps into behavioral environmental attributions that reflect causal attributions of health outcomes related to behaviors and environmental factors (e.g., she smoked too much). The items consist of a vignette followed by a 5-point Likert-type scale ranging from 1 (no effect) to 5 (great effect). The CHAQ was intended to identify individuals who subscribe to cultural health beliefs present in various Latino subgroups. Murguia et al. (2000) do not provide reliability information for the scale. The CHAQ was reduced from 24 items to 16 items and the response choices were modified from a Likert-type scale ranging from 1 (no effect) to 5 (great effect) and replaced with the responses of “yes”, “no”, and “maybe” (see Appendix I). The Cronbach alpha for the CHAQ instrument was obtained for this study’s sample and it was found to display strong internal consistency ($\alpha = .84$).

Procedure

Participants were recruited from predominantly Latino/a communities from the Front Range region in Colorado (e.g., Denver, Fort Collins, Commerce City) for all phases of this study. Specifically, participants were recruited at community agencies and health and cultural fairs (e.g., Dia de la Mujer Latina, 9 Health Fair, and El Grito de Independencia). Trained research assistants visited field sites which agreed to allow recruitment at their event and approached women who appeared to meet the eligibility criteria. Research assistants recruited potential participants by reading a short description of the project to individuals at field sites.

All potential participants were informed about the purpose of the study, what was required of their participation, and the incentives that they would receive (i.e., \$25 dollars in cash or a gift t-shirt, apron, tote bag) for their time. Participants who verbally agreed to be part of the study were asked to review and sign a consent form to participate in the study. The consent form described the study, the possible risks of participating, the benefits and rights as research participants. If they agreed to participate, they were given two copies of the consent form. The first copy was for them to sign and return to the research assistant and the second was for them to keep (see Appendix J).

The investigators were responsible for fully informing participants about the study's purpose, and procedures for conducting the final participant recruitment into the study. A research assistant was available during the administration to answer any of the participants' questions or concerns. If participants had difficulty reading the questionnaire, then a research assistant was present to assist in the reading of items. Every attempt was made not to bias respondent's responses. For example, if a participant

asked if her answer was correct, then the research assistant would inform her that we were interested in her opinion and avoided steering the respondent to answer one way or another. No deceptive practices (e.g., withholding the purpose of the study from participants) were employed. In addition, participants were provided with a pamphlet that included locations that they could contact regarding free or low cost mammograms in Colorado.

Phase I: Instrument Development

The instrument development phase consisted of the creation and content validation of the items for the scale. The initial pool of approximately 60-80 items for the scale was generated based on the conceptual framework that operationalized the constructs of Feeling Healthy, Feeling Indecent, Feeling Threatened (Borrayo & Jenkins, 2001a; Borrayo & Jenkins, 2001b; Borrayo et al., 2005), with further support from the existing literature on Latinos' cultural health beliefs (Saint-Germain & Longman, 1993; Salazar & Carter, 1994). The items were developed by a research team consisting of the study's PI (Ph.D trained), Co-PI (Master's level trained) and five trained undergraduate students who were familiar with the culture and who were knowledgeable of the three constructs of interest. Thus, the research team consisted of seven individuals who were all Latinas and most spoke and read Spanish fluently, therefore adding cultural experience and knowledge as well as appropriate use of Spanish to the item development process. During this phase, the research team was provided with precise and detailed descriptions of the three target constructs and the dimensions of each construct. For example, the detailed descriptions included concise definitions of each of the three constructs followed by descriptions of all the dimensions for the constructs and examples

to illustrate each construct. The research team was also trained by the PI and Co-PI on how items and responses should be constructed (DeVillis, 1991). For example, items should not be too lengthy because lengthy items tend to increase the complexity and diminish clarity.

In addition, the research team was instructed to pay special attention to the wording of items to ensure the use of language that was simple, straightforward, and appropriate for a 5th to 6th grade reading level and below. This is because according to the 2000 U.S. Census, about half (48%) of adult Latinos have less than a high school education. Moreover, members of the research team were provided with guidance in the form of handouts (see Appendix K & L) and discussion about the wording of items because every word in a question can influence the validity and reproducibility of the responses (Cummings, Stewart, & Hulley, 2001). They were instructed to develop items that were free of ambiguity, encouraged honest answers and that would not be potentially offensive to the respondent. Specifically, the items had to be clear such that concrete words were preferred over abstract words. Items had to be simple and thus use of common words that conveyed the idea and avoided technical medical terms and jargon. Further, they were instructed to avoid “loaded” words and stereotypes that suggest that there is a most desirable response (Cummings et al., 2001). It is useful to set a tone that allows the respondent to admit behaviors or beliefs even if they may be considered undesirable. Items were developed by following the structure of statements one-sentence in length.

Items presented respondents with a simple statement and a list of possible responses that indicated their agreement (i.e., yes, maybe, no) to the statement. Items

consisted of an item stem and the item responses. More specifically, each item presented a statement (item stem) and the respondent had to choose the response that they agreed with (item response) from a list of alternatives. The advantage of using simple statement items is that participants will find these items to be straight forward and, easier to comprehend and complete, thus more likely to avoid responses that can be potentially incorrect, biased, or misunderstood.

The items were developed in English and then translated into Spanish. The items were developed in English because one of the research assistants (1 out of 7) was more comfortable writing in English than in Spanish. In addition, communication among team members about the items was easier in English given that all of them were fluent in English. The undergraduate research assistants who were fluent in Spanish translated the items from English to Spanish. Next the research assistants as a group reviewed each of the items for clarity and appropriate translation. Items with obvious discrepancies, that were unclear or that sounded incorrect in Spanish were then modified. Back-translation methods were not utilized because the main purpose of this study was to develop a Spanish version of the scale rather than an equivalent version in both English and Spanish. Back-translation will be utilized in the future when the English version is developed.

Furthermore, in order to assess item validity all research assistants were asked to evaluate item-construct correspondence by categorizing randomized items into each of the construct dimensions. This served to provide researchers with confidence that the items were in fact tapping into the appropriate dimensions. Percentage agreements were calculated and items with less than 80% agreement were either eliminated or revised.

Furthermore, two graduate students who were not part of the research team nor had participated in the item development process also evaluated the item-construct correspondence. The two graduate students provided a non-biased perspective since they were not involved in the item development process. Again, items that displayed low agreement between the two raters were either eliminated or revised. Items with high agreement between the raters provided a further indication of item validity and these items were retained as potential items for the scale (see Appendix M).

According to scale development principles (DeVillis, 1991), an item pool that is three or four times as large as the final scale should be generated. Since we intended to have a final scale of approximately 28-items, we initially developed 166 items. However, because we were concerned that a scale with so many items would be tiring and difficult to respond to by a low education and low health literacy sample of Latinas, two versions of the scale were tested. The first consisted of 60 items and the second consisted of 80 items. Of the 288 participants, 126 (44%) completed the 60 item version and 162 (56%) completed the 80 item version.

Endorsement of the “yes” response indicated that Latinas agreed that the statement was true, while endorsement of “maybe” indicated that Latinas were unsure whether it was true or not and endorsement of “no” indicated that Latinas agreed that the statement was false. As an example, an item that taps into beliefs about BC as a symptomatic illness follows:

“I would wait to feel pain before going to have my breasts checked.”

Yes

No

Maybe

As an example, an item that taps into beliefs about BC relating to female modesty

follows:

“It is not proper to let anyone but your partner see your breasts.”

Yes No Maybe

As an example, an item that taps into beliefs about BC as a “just world” belief follows:

“Only God can decide if I get breast cancer.”

Yes No Maybe

Content validation

Content validity concerns the extent to which a specific set of items reflects a content domain (DeVillis, 1991). According to DeVillis (1991) it is difficult to measure beliefs because we do not have a convenient listing of the relevant universe of items. However, having items reviewed by experts for relevance to the domain helps to maximize item appropriateness. In this study, in order to establish content validity, each of the seven research team members was asked to identify the appropriate construct for each item by comparing the item to the conceptual definitions (Champion, 1993). In addition, inter rater agreement was computed based on the individual evaluations made by each of the five undergraduate Latina research assistants. Then, two graduate students of Latino/a descent were asked to also repeat the same task of identifying the appropriate construct for each item. Similarly, inter rater agreement was computed based on the evaluations made by each of these graduate students (see Appendix M).

Phase II: Sub-scale Creation

The aim was to collect data from participants who were low to highly acculturated in order to achieve a range of responses. According to Netmeyer et al. (2003) it is important to consider the size of the sample, sample composition, initial item reliability

estimates, and the number and type of validity related scales to include at this stage of the study. Sample size was considered in relation to how many items were in the initial pool of items. Given that there would be approximately 28-36 items, it was recommended that the sample consist of anywhere from 100 to 300 participants. In regards to sample composition, it is recommended that samples from relevant populations be used. Therefore, to test all the items and reduce them, the scale was administered to 288 self identified Latinas.

Participants were administered either the 60 or 80 item LBCS, along with the socio-demographic and the cancer screening items (e.g., BC exams and Pap smears). Two questionnaires were used for data collection. Questionnaire I consisted of 60 items. After administering this questionnaire, it was found that participants did not experience much difficulty in completing a questionnaire of such length. Because of this, questionnaire II was created with the initial 60 items and 20 additional new items (80 items total). Participants were recruited at a Latino cultural event in Denver. The questionnaire packet took participants approximately 30 to 60 minutes to complete.

Chapter III: Results

Phase II Demographic characteristics

Demographic characteristics of the participants are presented in Tables 1, 2 and 3. Participants' ages ranged from 40 to 82 years old ($M = 51$, $SD = 9.3$). Participants reported living in the United States anywhere between a couple of months (.15 years) to 79 years ($M = 19$, $SD = 18$) and a median of 13 years (see Table 1). Two hundred and fifteen (75%) participants reported being born in Mexico, eight (3%) were born in South America, 16 (6%) were born in Central America, and 42 (15%) participants were born in the United States (see Figure 1). Twenty-four (9%) participants reported being single, 151 (53%) reported being married, 31 (11%) reported being divorced, 35 (12%) reported being separated, 20 (7%) reported that they were cohabiting, and 23 (8%) participants reported being widowed.

Of the 271 participants who responded to this question, 218 (80%) participants reported obtaining the majority of their education in Latin America (e.g., Mexico) and 53 (20%) participants reported receiving the majority of their education in the United States (see Table 2). On average, participants reported that they had 8.5 ($SD = 4.665$) years of education.

One hundred and twenty-seven (44%) participants reported themselves to be employed while 160 (56%) were not employed. Two hundred and six (82%) participants

were not retired while 45 (18%) were retired. Eighty one (30%) participants indicated their occupation to be a housewife, 54 (20%) participants reported cleaning to be their occupation, 14 (5%) participants reported being a clerk, 10 (4%) participants reported working in a factory, eight (3%) participants reported being a cook, 39 (14%) participants reported being in a professional occupation, seven (3%) participants reported having an unidentified occupation. Therefore, the most common occupation was that of housewife.

Medical Health Care Coverage. Participants were also asked about their medical health coverage. Of a total of 279 participants, 254 (91%) participants did not have Medicare while 25 (9%) did have it. Out of a total of 276 participants, 256 (93%) participants did not have Medicaid while 20 (7%) did have it. Of a total of 275 participants, 219 (80%) participants did not have health insurance while 56 (20%) participants did report having health insurance. Of a total of 275, 188 (68%) participants had no medical health care coverage. Therefore, the majority of women in this study did not have any type of health care coverage (see Table 3).

Household size and Income. Participants were asked to indicate the number of individuals residing in their household and their monthly household income. Overall, 286 participants reported a mean of 4 ($SD=1.88$) individuals residing in their household. Specifically, 21 (7%) reported one, 48 (17%) reported 2, 50 (18%) reported 3, 53 (19%) reported 4, 64 (22%) reported 5, 25 (9%) reported 6, 13 (5%) reported 7, 7 (2%) reported 8, 2 (1%) reported 9, 2 (1%) reported 10, and 1 (.3%) participant reported 12 individuals living in their household. Nine (3%) participants reported a monthly income of \$0, 109 (39%) reported less than \$1,000, 103 (37%) reported \$1,001-\$2,000, 30 (11%) reported \$2,001-\$3,000, 11 (4%) reported \$3,001-\$4,000, and 17 (6%) reported a monthly income

of more than \$4,000 (see Table 2). Given that the mean number of people living in a household was 4 and that 79% of women reported earning \$2,000 or less per months, these figures suggest that approximately 79% of the women lived at or below 200% of poverty level, as established by the U.S. Department of Health and Human Services (2007).

Breast Cancer Screening. Of the total of 288 participants, 278 (96.5%) participants reported never having been diagnosed with any type of cancer while 10 (3.5%) reported they had in the past been diagnosed with some form of cancer. Of those who did report having been diagnosed with cancer, six participants indicated having been diagnosed with cervical cancer, one participant indicated having been diagnosed with stomach cancer; and three participants reported being diagnosed with another type of cancer.

The ACS recommends that women 40 years of age and older conduct a breast self exam (BSE) at least once a month. However, of the 285 participants, only 140 (49%) participants reported performing a BSE in the past month while 145 (51%) did not (see Figure 2). Thirty-nine (14%) participants reported not having performed a BSE in the last year, 108 (39%) participants reported having performed a BSE one to two times in the past year, 46 (17%) participants reported having performed a BSE three to five times in the past year, 40 (14%) participants reported having performed a BSE six to nine times in the past year, and 46 (17%) participants reported having performed a BSE ten to twelve times in the past year (see Figure 3).

Of the total 275, 206 (75%) participants had a physician recommend they have a mammogram while 69 (25%) participants reported that a physician had not recommended

that they have a mammogram. Two hundred and forty-four (85%) participants reported having been taught by a physician or nurse how to perform a BSE while 43 (15%) reported not having been taught to perform a BSE.

Participants were also asked to report how long it had been since their last mammogram. According to the ACS, women age 40 and older should receive a mammogram every year. Of a total of 282, 95 (34%) participants had their last mammogram every year. Of a total of 282, 95 (34%) participants had their last mammogram less than a year ago, 70 (25%) participants had their last mammogram approximately 1 year ago, 36 (13%) participants had their last mammogram approximately two years ago, 12 (4%) had their last mammogram approximately three years ago, 20 (7%) participants had their last mammogram more than three years ago and 49 (17%) participants claimed to have never had a mammogram (see Figure 4). Additionally, participants were asked when they expected to have their next mammogram. Ninety-six (33%) participants thought they would have their next mammogram within a matter of weeks, 118 (41%) participants thought they would have their next mammogram in a matter of months, 51 (18%) participants thought they would have their next mammogram in a matter of years, and 22 (8%) participants thought they would have their next mammogram in the distant future (see Figure 5).

Of a total of 286, 108 (38%) participants reported having had their last Pap smear less than a year ago, 81 (28%) participants reported having had a Pap smear a year ago, 38 (13%) participants reported having had a Pap smear two years ago, 13 (5%) participants reported having had their last Pap smear approximately 3 years ago, 36 (13%) participants reported having had their last Pap smear more than 3 years ago, and 10 (4%) reported never having had a Pap smear.

Phase II-1st set of Principal Components Analysis

During phase II of item analysis, a principal components analysis was used. PCA can be used in scale development to simplify a data set, by reducing multidimensional data sets to fewer dimensions for analysis. It is also useful in testing the internal consistency and validity of a measure. With PCA, the factors are estimated to represent the variance among the items in the scale as economically as possible, with the fewest number of meaningful dimensions as possible. Principal components analysis is useful because it simplifies the data by representing a large set of observed variables with a smaller set of hypothetical variables (factors). In this study, this was accomplished by identifying groups of items that highly covary with one another and appeared to define the underlying latent constructs (construct validity).

Principal components analyses were performed on all the data (i.e., Questionnaire I, 60 items and Questionnaire II with 80 items). The goal was to reduce the number of items by identifying those that best tap into the latent constructs of interest (i.e., Feeling Healthy, Feeling Indecent, and Feeling Threatened). Separate analyses were conducted for both questionnaire versions. All participants completed the first 60 items and thus all were included in the analyses for Questionnaire I. Only participants who completed Questionnaire II were included in those analyses. A list of the analyses conducted in phase II can be found in Appendix N.

A general PCA was conducted for Questionnaire I, without setting the number of factors. The Kaiser-Meyer-Olkin (KMO) statistic which ranges from 0 to 1, with .6 being the minimum value suggested, was generated to assess the factorability of the data. The KMO of sampling adequacy for Questionnaire I was .80 and the Bartlett's test of

sphericity was significant ($p = .0001$), both of which suggest that factor analysis is appropriate for this data set. In addition, the scree plot was inspected and 4 factors were clearly suggested. The eigenvalues were also inspected and 16 components had an eigenvalue greater than 1, which explained 62% of the variance, therefore, suggesting that it would be acceptable to extract up to 16 factors.

A general PCA was also conducted for Questionnaire II. The KMO of sampling adequacy for Questionnaire II was .64 and the Bartlett's test of sphericity was significant ($p = .0001$), which exceeded the recommended value of .6 for a good factor analysis. The scree plot was inspected and 6 factors were suggested. The eigenvalues for Questionnaire II were examined. There were 24 components that had an eigenvalue greater than 1, which explained 71% of the variance, therefore, both displayed an adequate KMO value. However, Questionnaire I displayed a stronger KMO value, suggesting that factor analysis may be more appropriate for the data for Questionnaire I as compared to Questionnaire II.

The Humphrey's-Montanelli parallel analysis procedure was used to determine the adequate number of factors to extract for Questionnaire I. The number of actual roots whose values exceed the value of the roots from the random correlation matrix is an indication of the number of factors to initially extract. After comparing the parallel analysis' raw data eigenvalues and means for the eigenvalues, an eight factor approach was suggested for the items on Questionnaire I. A parallel analysis was also utilized to determine the adequate number of factors to extract for Questionnaire II. After comparing the parallel analysis' raw data eigenvalues and means for the eigenvalues, a seven factor approach was suggested for items on Questionnaire II.

Based on the results of the parallel analysis for Questionnaire I and II, PCAs with an oblique rotation were conducted for both versions with the recommended number of factors. An oblique rotation analysis is appropriate when the items are believed to be correlated with each other. Only items with factor loadings equal to or above .40 were considered for retention. Nine items greater than .40 (range .49 to .76) loaded on factor 1, six items (range .42 to .65) loaded on factor 2, five items (range .65 to .86) loaded on factor 3, eight items (range -.45 to -.66) loaded on Factor 4, eight items (range .41 to .85) loaded on factor 5, four items (range .42 to .72) loaded on factor 6, five items (range .43 to -.73) loaded on factor 7 and two items (range .42 to .43) loaded on factor 8 (see Table 4).

As a comparison, a PCA with a varimax rotation was conducted for Questionnaire I. A varimax rotation is appropriate when items are believed to not be correlated. Nine items (range .50 to .70) loaded on factor 1, nine items (range .43 to .65) loaded on factor 2, eight items (range .42 to .82) loaded on factor 3, five items (range .65 to .83) loaded on factor 4, four factors (range .60 to .74) loaded on factor 5, six items (range .41 to .66) loaded on factor 6, three items (.53 to .72) loaded on factor 7, and three factors loaded on factor 8 (range .41 to .48). However, after examining the factor loadings, the factor loadings on the oblique rotation made more theoretical sense. Therefore, from this point forward all factor analyses were conducted with an oblique rotation (see Table 5).

A principal components analysis with an oblique rotation with the recommended 7 factor solution for Questionnaire II was conducted. Only items with factor loadings equal to or above .40 were considered. Nine items (range .44 to .64) loaded on factor 1, 14 items (range .42 to .61) loaded on factor 2, six items (range .49 to .80) loaded on

factor 3, eight items (range -.40 to -.78) loaded on factor 4, nine items (range .45 to .75) loaded on factor 5, five items (.42 to .62) loaded on factor 6, and five items (range .41 to .53) loaded on factor 7.

Reliabilities for items by construct and dimension

Items were evaluated for internal consistency which allowed us to make decisions as to whether to retain or eliminate items from the item pool. Specifically, reliabilities were conducted based on the categories that were determined during the item-construct correspondence process. Reliabilities were then calculated by construct and by dimension for both Questionnaires I and II. Overall, 28 items for the Feeling Healthy construct showed strong internal consistency for Questionnaire I ($\alpha = .79$) and the 37 items on Questionnaire II ($\alpha = .79$). However, the four items for the *physical predetermination* dimension showed low internal consistency for both Questionnaire I ($\alpha = -.02$) and for the six items on Questionnaire II ($\alpha = .11$). The five items for the *detrimental external sources* were adequate for Questionnaire I ($\alpha = .69$) and the six items on Questionnaire II ($\alpha = .74$). The three items for the breast feeding items tended to have a lower than desirable internal consistency for Questionnaire I ($\alpha = .64$) and the four items on Questionnaire II ($\alpha = .70$). The five items for the *divine predestination* displayed strong internal consistency for Questionnaire I ($\alpha = .85$) and the six items on Questionnaire II ($\alpha = .84$). The four items for *symptomatic illness* displayed low internal consistency for Questionnaire I ($\alpha = .48$) and for the six items on Questionnaire II ($\alpha = .42$). The three items for the dimension of *fatal illness* displayed low internal consistency ($\alpha = .25$) and the four items for Questionnaire II ($\alpha = .31$). The four items for the dimension of *shameful illness* displayed adequate internal consistency for Questionnaire I ($\alpha = .72$) and

the five items Questionnaire II ($\alpha = .75$) (see Table 6).

Reliabilities for the Feeling Indecent construct and dimensions were also conducted. Overall, the 16 items for Feeling Indecent construct showed strong internal consistency for Questionnaire I ($\alpha = .84$) and for the 22 items in Questionnaire II ($\alpha = .77$). The four items for the *female modesty* dimension showed low internal consistency for both Questionnaire I ($\alpha = .58$) and for the six items on Questionnaire II ($\alpha = .67$). The six items for the *female commonality* dimension showed adequate internal consistency for Questionnaire I ($\alpha = .81$) and for the six items on Questionnaire II ($\alpha = .80$). The three items for *male physician distrust* showed low internal consistency for Questionnaire I ($\alpha = .67$) and for the five items on Questionnaire II ($\alpha = .34$). The three *physician trust* items showed low internal consistency for Questionnaire I ($\alpha = .20$) and the five items on Questionnaire II ($\alpha = .29$) (see Table 6).

Reliabilities for the Feeling Threatened construct were also calculated. Overall, the 16 Feeling Threatened items displayed adequate to low internal consistency for Questionnaire I ($\alpha = .65$) and the 21 items for Questionnaire II ($\alpha = .74$). The 3 items for the *just world beliefs* displayed low internal consistency for Questionnaire I ($\alpha = .57$) and the six items for Questionnaire II ($\alpha = .66$). The four *denial* items displayed low internal consistency for Questionnaire I ($\alpha = .004$) and the five items on Questionnaire II ($\alpha = .27$). The three *loss of feminine identity* items also displayed low internal consistency for Questionnaire I ($\alpha = .31$) and for the four items on Questionnaire II ($\alpha = .55$). The six items for the *relationship with partner* showed low internal consistency for Questionnaire I ($\alpha = .69$) and the six items on Questionnaire II ($\alpha = .69$) (see Table 6).

Based on the reliabilities for each of the subscales, items with strong reliabilities

were retained while items with low reliabilities were eliminated. Specifically, items that made up the *physical predetermination* subscale (i.e., 2, 9, 15, 29, 69, 80) were eliminated because both Questionnaire I ($\alpha = -.02$) and Questionnaire II ($\alpha = .11$) displayed low reliability. The items that made up the *fatal illness* subscale (i.e., 21, 47, 51, 62) were eliminated because both Questionnaire I ($\alpha = .25$) and Questionnaire II ($\alpha = .07$) displayed low reliabilities. The items on the *physician trust* subscale (i.e., 1, 22, 41, 64, 73) were eliminated because Questionnaire I ($\alpha = .20$) and Questionnaire II ($\alpha = .29$) displayed low reliabilities. The items on the *denial* subscale (i.e., 28, 33, 50, 53) were eliminated because both Questionnaire I ($\alpha = .004$) and Questionnaire II ($\alpha = .27$) displayed low reliability. Finally, 2 items from the *male physician distrust* subscale (i.e., 71, 79) were eliminated because they were not found to increase the subscale's Cronbach alpha. Therefore, 22 items were dropped from the initial 80 items, thus leaving a total of 58 items.

Since several items were eliminated, a parallel analysis was conducted to reexamine what factor solution would be suggested for both Questionnaire I and II. The results for the parallel analyses suggested that a six factor solution was appropriate for both Questionnaire I and II. Following the deletion of 22 LBCS items, principal components analysis with an oblique rotation was conducted for both Questionnaires I and II. Results for Questionnaire I revealed a KMO of .83 and the Bartlett's test was significant ($p = .0001$), suggesting that factor analysis was appropriate for the data. The results for Questionnaire II revealed a KMO of .729 and the Bartlett's test was significant ($p = .0001$). The KMO for Questionnaire I was stronger than that for Questionnaire II, therefore, more weight was placed on the results for Questionnaire I.

Factor loadings above .40 were considered as items eligible to be retained. Nine items (i.e., 43, 19, 13, 32, 58, 36, 34, 37, and 14) loaded onto Factor 1 (Feeling Healthy: Detrimental External Sources). Seven items (i.e., 39, 10, 12, 46, 26, 11, and 25) loaded onto Factor 2 (Feeling Threatened: relationships). Nine items (i.e., 30, 27, 31, 20, 49, 24, 35, 44, and 38) loaded onto Factor 3 (Feeling Indecent: female modesty and female commonality). Five items (i.e., 59, 45, 17, 40, and 60) loaded onto Factor 4 (Feeling Healthy: divine predestination). Seven items (i.e., 56, 57, 54, 52, 55, 18, and 4) loaded onto Factor 5 (Feeling Indecent: female modesty). Three items (i.e., 6, 7, and 23) loaded onto Factor 6 (Feeling Healthy: symptomatic illness).

For Questionnaire II, 10 items (i.e., 19, 43, 13, 34, 32, 36, 58, 77, 74, 14) loaded onto Factor 1, 8 items (i.e., 39, 10, 12, 25, 26, 46, 11, 72) loaded onto Factor 2, 8 items (i.e., 44, 57, 56, 52, 66, 16, 42, 55) loaded onto Factor 3, nine items (i.e., 30, 27, 20, 31, 49, 44, 38, 24, 35) loaded onto Factor 4, seven items (i.e., 59, 45, 17, 60, 67, 40, 8) loaded onto Factor 5, four items (i.e., 6, 7, 23, 75) loaded onto Factor 6. For Questionnaire II, item 3, 54, 68, 70, 78 had factor loadings below .40. Next, reliabilities were calculated for each of the factors based on the items that loaded onto each, while paying special attention to corrected item correlations, item to total correlations, and inter-item correlations.

Corrected item correlations

Corrected item correlations, which correlate the item being evaluated with all the scale items, excluding itself, were examined. There is no rule about how big these values should be. Therefore, LBCS items with relatively high item correlations were retained while items with relatively low item correlations were considered as candidates for

elimination. The items that loaded onto Factor 2 displayed strong internal consistency ($\alpha = .81$). However, item 25 was eliminated because it had the lowest corrected-item total correlation ($r = .43$) and it also had relatively low inter-item correlations. Items that loaded onto Factor 3 displayed strong internal consistency ($\alpha = .86$). None of the items that loaded onto Factor 3 was eliminated because each item displayed a high corrected-item total correlation. The items on Factor 4 displayed strong internal consistency ($\alpha = .85$). None of the items for Factor 4 was eliminated because each displayed a high corrected-item total correlation. The items for Factor 6 had low internal consistency ($\alpha = .64$). Item 23 was eliminated from Factor 6 because this item had the lowest corrected-item total correlation ($r = .29$) and had the highest Cronbach alpha if item deleted.

Item-to total correlations and Inter-item correlations

Some (Netmeyer et al., 2003) have argued that average inter-item correlations are a more useful index of internal consistency reliability than is coefficient alpha. The range of inter-item correlations may depend on the specificity of the construct being measured. In addition, item to total correlations and inter-item correlations were inspected. Item to total correlations represent the correlation of a single item with the sum of all other items, excluding itself. For example, if there were 20 items being considered for a scale, the corrected item total correlation for any one of the 20 items would consist of its correlation with the other 19. There is no rule about how big these values should be (Netmeyer et al., 2003). However, if the correlation is low, it may be an indication that the item is not really measuring what the rest of the test is trying to measure or the item may be from a different domain. A high correlation indicates that high scores on this item are associated with high scores on the construct. However, if the value is too high it

might suggest that the item is unnecessary. Negative item total correlation values might be an indication that the item was not accurately recoded or that the item is inappropriate. There is no rule of thumb as to how large the corrected item total correlations should be, therefore they need to be examined in respect to the performance of the rest of the items. The items on factor 5 displayed low internal consistency ($\alpha = .42$). Item 55 and item 18 were eliminated because item 55 had a negative corrected item total correlation ($r = -.30$) and the Cronbach alpha if the item was deleted suggested increasing the reliability to .57. Factor 1 displayed strong internal consistency ($\alpha = .80$). However, item 37 was eliminated because this item was tapping into the Feeling Threatened construct and the other items that loaded on Factor 1 tapped into the Feeling Healthy: detrimental external sources construct.

Final Principal Components Analysis and final reliabilities for the 36 item LBCS

After the series of principal component analyses and tests of reliabilities, the scale was reduced to 36 items. Then a PCA with an oblique rotation was conducted and the reliabilities for each subscale were conducted to inspect the structure of the final scale. The KMO was found to be strong ($KMO = .83$) and significant ($p = .0001$). According to the recommended six factor model, items 20, 24, 27, 30, 31, 35, 38, 44, and 49 loaded highly onto Factor 1 (Feeling Indecent), specifically the *female modesty* dimension. Items 10, 11, 12, 26, 39, 46 (reverse coded) loaded onto Factor 2 (Feeling Threatened), specifically the *relationships* dimension. Items 13, 14, 19, 32, 34, 36, 43, 58 loaded highly on Factor 3 (Feeling Healthy), specifically the *detrimental sources* dimension. Items 17, 40, 45, 59, and 60 loaded highly onto Factor 4 (Feeling Healthy), specifically the *divine predestination* dimension. Items 4, 6, 54, 56, and 57 loaded highly on Factor 5

(Feeling Indecent), specifically *shameful illness*. Finally, items 6 and 7 loaded highly on Factor 6 (Feeling Healthy), specifically *symptomatic illness*. Lastly, item 61 from Questionnaire I was added to Factor 5. The six factor model explained 52.5% of the variance for Latinas' cultural health beliefs. From approximately 60 to 80 items, the pool was reduced to approximately 15 items for the Feeling Healthy sub-scale, 15 for the Feeling Indecent sub-scale and 6 for the Feeling Threatened sub-scale; a total of 36-items for the final instrument, which constitutes the Latina Breast Cancer Screening (LBCS) Scale (see Table 7).

Reliabilities for the six factor model

Reliabilities were calculated based on the items that loaded onto each of the six factors. The reliabilities for the items of factor 1 (Feeling Indecent: *female modesty*) were found to have strong internal consistency ($\alpha = .84$). The reliabilities for the items of Factor 2 (Feeling Threatened: *relationships*) were found to have strong internal consistency ($\alpha = .81$). The reliabilities for the items on Factor 3 (Feeling Healthy: *Detrimental sources*) were found to have strong internal consistency ($\alpha = .78$). The reliabilities for the items of Factor 4 (Feeling Healthy: *divine predestination*) were found to have strong internal consistency ($\alpha = .85$). The reliabilities for the items of Factor 5 (Feeling Indecent: *shameful illness*) were, despite being less than the desired .70, judged to have adequate internal consistency ($\alpha = .63$). The reliabilities for Factor 6 (Feeling Healthy: *symptomatic illness*) were found to have adequate internal consistency ($\alpha = .74$) (see Table 8).

Pilot Test for the 36 Item Revised LBCS Scale

Once the LBCS scale was reduced to 36 items, a questionnaire packet consisted of

8 scales which included the reduced 36 item LBCS scale, the 24 item CHAQ, the 8 item GBMMS, the 18 item BCKT I, the 20 item BCKT II, the Fatalism Inventory, and the 30 item ARSMA-II. This packet of instruments was pilot tested at a community fair. Pilot testing was essential because the process helped clarify, refine, time the instrument, and determine whether each item produced an adequate range of responses.

The sample consisted of 20 low income and low acculturated Latina women, who approximated the sample (i.e., 40 years of age, Spanish speaking, low income Latinas), to assess the scales' administration feasibility with the target population. A representative sample of the target population was utilized because it is more useful to use a sample from a relevant population of interest instead of a convenience sample (Netmeyer et al., 2003). A total of six researchers helped recruit and administer the questionnaire packet to 20 participants. Participants were asked for feedback concerning the specific use of words and phrases, the sentences' understandability, and the appropriateness of the instructions. Specifically, these women were asked to note any ambiguous items or any use of uncommon medical terminology not understood. After they completed the instrument, participants were asked for their comments or suggestions regarding the instructions, items, or overall format of the questionnaire that included the seven scales. Based on their feedback, items were deleted, reworded or clarified.

In summary, several participants reported that the questionnaire packet was too long and that several items were repetitive (i.e., BCKT I and BCKT II). Several participants also found the CHAQ directions hard to follow (i.e., answer four questions based on each of the presented scenarios). Based on the participant comments and suggestions, the CHAQ was shortened to include only four scenarios. The BCKT I and

BCKT II, the GBMMS, the Fatalism inventory, and the CHAQ were each shortened. In addition, we decided to eliminate the ARSMA-II because the ARSMA-II would have needed to be significantly modified to simplify it to a format that would be understood by most women of various Latino descents. Instead the five item shortened ARSMA I with the General Acculturation Index was selected to be used for phase III.

Phase III: Scale Establishment. In the final phase of the study, we tested the LBCS with 155 participants to establish its psychometric properties: the instrument's validity and reliability. Participants were recruited at a Mexican Independence day festival (i.e., El Grito) in Denver. A total of eight participants were dropped from the analyses. Therefore, 147 study participants were administered a questionnaire packet that included the 36 item LBCS and all the other measures previously mentioned (i.e., socio-demographics, BC screening items, General Acculturation Index, the Fatalism Inventory, CHAQ, GBMMS, Stager's (1993) BCKT, and McCance et al.'s (1990) BCKT plus the socio-demographic questions (see Appendix O). Three versions of the questionnaire were created by moving the order in which the scales were to be responded to eliminate or minimize potential order effects. The questionnaires took participants approximately 30-45 minutes to complete.

Validity refers to the extent to which an instrument indeed measures the constructs that it intends to measure. In the previous two phases, we established the scale's *content validity* by having a group of research assistants and graduate students assess the extent to which they believed the items measured the three latent constructs, and the scale's *construct validity*, by selecting homogenous items that covary with one another on a single construct. In the third phase, we further determined the scale's

construct and criterion validity.

Construct validity can also be assessed by the extent to which a measure “behaves” the way a latent construct is expected to “behave” with respect to established measures of other constructs. For example, we would expect that the three latent constructs (Feeling Healthy, Feeling Indecent, Feeling Threatened) reflect traditional health beliefs that are most likely characteristic of women more identified with Latino culture. Thus, to establish construct validity, we expected that higher overall scores on the LBCS would be negatively correlated with acculturation in the Anglo U.S. culture and positively associated with identification with the Latino culture as measured by the shortened version of the ARSMA-I General Acculturation Index. In addition, the GBMMS mistrust items were also used to establish construct validity between the LBCS and these items. It was expected that higher scores on the GBMMS would be positively correlated with the male physician distrust and physician trust items from the Feeling Indecent subscale.

To further establish construct validity, we also expected that the LBCS would correlate with the Latino Cultural Health Attributions Questionnaire (CHAQ) (Murguía et al., 2000) and with constructs from the Breast Cancer Knowledge Test(s) (BCKT). When correlating items from the LBCS subscales with items from the CHAQ subscales, we expected that items tapping into traditional beliefs about ‘detrimental external sources’ (e.g., caffeine, physical trauma) and ‘provider behavior’ would be positively correlated with behavioral environmental attributions. Items that tap into “divine predestination” would be positively correlated with powerful others control construct items and items tapping into “just world” beliefs would be positively correlated to equity attribution

beliefs. With respect to the BCKT, it was expected that traditional responses on the LBCS would correlate positively with BCKT's items that tap into misconceptions. Biomedical responses on the LBCS were expected to correlate positively with BCKT's items that tap into medical knowledge, and vice versa. Specifically, it was expected that convergent validity would be established. Convergent validity is demonstrated when a test correlates highly with other variables or tests with which it shares an overlap of constructs. Therefore, construct and convergent validity can be assessed at the same time. Convergent and discriminant validity are both subcategories of construct validity. Demonstrating convergent and discriminant validity among the LBCS in itself is evidence for construct validity.

Descriptive Analyses. Descriptive analyses were conducted for the 147 participants in phase III. Specifically, means and standard deviations were calculated for participants' age, education level, length of time living in the U.S. and number of individuals residing in their household. Latinas ages ranged from 40 to 76 with a mean age of 49.5 years ($SD = 8.5$). Women reported having up to 17 years of education ($M = 9.66$, $SD = 4.55$). Women reported that they had lived in the U.S. anywhere from .16 months to 76 years ($M = 22.84$, $SD = 20.44$) with a median of 15 years. Women reported that up to 10 individuals resided in their household ($M = 3.89$, $SD = 1.9$) (see Table 9).

Frequency distributions were conducted to examine country of birth, country where they received the majority of their education, marital status, monthly income, employment status, and medical health coverage. Of the 147 participants, 102 (69.4%) participants reported being born in Mexico followed by 35 (24%) born in U.S, six (4%) born in South America, three (2%) born in Central America and one participant was born

elsewhere (see Figure 1). Eighty-seven (59%) participants reported being married, 21 (14%) reported being separated, 14 (10%) reported being divorced, 13 (9%) reported being single, seven (5%) reported being cohabiting, and five (3%) reported being widowed. Of the 144 participants who responded to this question, 102 (71%) reported obtaining the majority of their education in Latin America (i.e., Central America, Mexico, South America). Seventy-nine (54%) reported being employed while 65 (45%) reported that they were not currently employed. Of the 145 participants who responded to this item, two (1%) participants reported no monthly income, 53 (37%) reported a monthly income of less than \$1,000, 49 (34%) reported a monthly income between \$1,001-2,000, 14 (10%) reported a monthly income between \$3,001 to \$4,000, and 16 (11%) participants reported earning more than \$4,000 (see Table 10).

Medical Health Care Coverage. Research suggests that access to healthcare and health care coverage are important indicators of BC screening behaviors. Frequency distributions were conducted to examine medical health coverage among participants. Of a total of 146 participants, 133 (91%) participants did not have Medicare while 13 (9%) did have Medicare. One hundred and forty-one (97%) participants did not have Medicaid while five (3%) did have it. One hundred and four (71%) participants did not have health insurance while 42 (29%) participants did report having health insurance. Finally, it was found that 87 (60%) participants reported having no type of medical health care coverage (i.e., health insurance, Medicare, or Medicaid). Therefore, the majority of women in this study did not have any type of health care coverage which may help to explain the lower rates of BC screening behaviors among Latinas (see Table 11).

The frequencies of physician recommendations, BC screening procedures (e.g.,

mammography, breast self-exam) and cervical screening procedures (e.g., Pap smears) were also calculated. Of the 147 participants, 141 (96%) reported that they had never been diagnosed with any type of cancer in the past, while six (4%) women reported that they had been diagnosed with some type of cancer in the past. Of those who reported having been diagnosed with cancer, one participant reported having had cervical cancer, three reported some other type of cancer, and two did not report what type of cancer they had been diagnosed with. Participants were asked whether a family member had ever been diagnosed with some type of cancer. Of the 147 participants, 107 (73%) reported that they did not know of any relatives who had some type of cancer, while 40 (27%) women reported that one of their relatives had been diagnosed with cancer. Of those that did report having a relative diagnosed with cancer, seven (5%) reported their mother, six (4%) reported their sister, three (2%) reported their aunt, three (2%) reported their grandmother, five (3%) reported more than one relative, and 12 (8%) reported some other relative.

Of the 147 participants, 21 (14%) women reported that a physician/nurse had not shown them how to exam their breasts while 125 (86%) reported that a physician/nurse had shown them how to examine their breasts. Of the 146 participants who responded to this item, 63 (43%) reported that they had not examined their breasts in the past month while 84 (57%) reported that they had examined their breasts in the past month (see Figure 2). Eighteen (12%) reported that they had not examined their breasts in the last year, 45(31%) reported that they examined their breasts one to two times, 24 (16%) examined their breasts three to five times in the past year, 31 (21%) reported that they examined their breasts six to nine times, 28 (19%) reported that they examined their

breasts 10-12 times in the past year (see Figure 3). Of the 145 participants, 34 (23%) reported that a doctor had not recommended that they have a mammogram, 111 (77%) reported that a doctor had recommended for them to have a mammogram.

Mammography and Pap Screenings. Of the 147 participants, 43 (29%) reported having had their mammogram less than a year ago, 38 (26%) had a mammogram a year ago, 19 (13%) reported having had a mammogram two years ago, eight (6%) reported having had a mammogram three years ago, and 31 (21%) participants reported that they had never had a mammogram (see Figure 4). Of 145 participants, 34 (24%) women reported that they planned on getting a mammogram in a few weeks, 61 (42%) in a few months, 42 (29%) in a few years, and eight women reported plans to get a mammogram in a distant future (see Figure 5). Of the 147 participants, 58 (40%) had a pap exam less than a year ago, 37 (25%) reported a year ago, 26 (18%) reported two years prior, nine (6%) reported three years prior, 12 (8%) reported over three years ago, and five (3%) women reported that they had never had a Pap smear.

Zero-order correlations were computed to determine the relationships among socio-demographic variables (i.e., age, education, income, length of time in U.S., marital status, medical coverage), and BC screening behaviors (BSE, last mammogram, plans to obtain a mammogram). For the purposes of analyses some demographic variables (i.e., birth county, insurance status, marital status) were reverse coded in order to allow for interpretation ease. A significant correlation was found between level of education and BSE in the past month, $r(146) = .17, p = .036$, such that women with higher levels of education were more likely to also report that they had performed a BSE in the past month. A significant correlation was found between age and last mammogram, $r(147) =$

$-.19, p = .025$, such that older Latinas were more likely to report a recent mammogram than younger Latinas. A significant correlation was found between age and last Pap smear, $r(147) = .24, p = .004$, such that younger Latinas were more likely to report that they had had a recent Pap exam. A significant correlation was found between medical health care coverage and last mammogram, $r(146) = .18, p = .026$, indicating that Latinas who reported that they had health care coverage were more likely to report a recent mammogram. A significant correlation was found between BSE in the past month and number of BSEs in the last year, $r(146) = .52, p = .0001$, indicating that women who reported having a BSE in the past month also were more likely to report frequent BSEs in the past year. A significant correlation was found between last Pap exam and last mammogram, $r(147) = .37, p = .0001$, indicating that women who had had a recent mammogram were also more likely to report having had a recent Pap exam (see Table 12).

Internal consistency reliability of an instrument is concerned with the homogeneity of the items in a scale. A scale is internally consistent to the extent that items are found to be highly correlated thus suggesting that the items are measuring the same thing (DeVillis, 1991). Cronbach's alpha (Carmines & Zeller, 1979) was used to assess the LBCS reliability. The Cronbach's alpha coefficient is a technique for estimating reliability through internal consistency. It was expected that the alpha reliability for the LBCS would be above .70. There is no rule about what value constitutes a good alpha coefficient value. However, according to DeVillis (1991), he considers values below .60 as unacceptable, between .70 and .80 as respectable, between .80 and .90, as acceptable. The overall LBCS scale displayed strong internal consistency

($\alpha = .93$). In addition, the reliabilities by factor were calculated and found to range from acceptable to good. Reliability coefficients for the subscales were .89 for Factor 1 (Feeling Indecent; *female modesty*), .60 for Factor 2 (Feeling Threatened: *relationships*), .79 for Factor 3 (Feeling Healthy: *detrimental sources*), .88 for Factor 4 (Feeling Healthy: *divine predestination*) .80 for Factor 5 (Feeling Indecent: *shameful illness*) and .74 for Factor 6 (Feeling Healthy: *symptomatic illness*).

Convergent Validity. To assess convergent validity, the medical mistrust items from the GBMMS, the fatalism inventory, and the CHAQ were all correlated to the overall LBCS scale and its six subscales. As expected, the LBCS scale (provider items) were significantly correlated to the GBMMS items (i.e., medical mistrust), (see Table 13), indicating that women with more traditional beliefs about their provider's behavior were also more likely to mistrust the medical community. The LBCS scale was significantly correlated to the fatalism inventory, $r(145) = .73, p = .0001$, indicating that women with more traditional fatalistic beliefs about BC as measured by the LBCS were more likely to hold fatalistic views about BC as measured by the fatalistic inventory. More specifically, fatalism was found to be significantly correlated to all six of the LBCS subscales. Finally, the LBCS scale was significantly correlated to the CHAQ scale, $r(140) = .55, p = .0001$, indicating that women with more traditional health beliefs about the causes of BC were more likely to hold traditional health attributions about health in general (see Table 14).

Discriminant Validity. In order to assess discriminant validity, correlations were conducted between acculturation the overall LBCS scale and its six subscales. No significant relationship was found between acculturation and the overall LBCS, $r(140) =$

-.13, $p = .12$. However, the LBCS detrimental sources subscale, $r(141) = -.23, p = .005$ and the LBCS divine predestination subscale, $r(141) = -.197, p = .019$ were both significantly correlated to acculturation. Therefore, low acculturated women were more likely to believe that detrimental sources such as breastfeeding, caffeine consumption, and breast injury were causes of BC than highly acculturated women. Additionally, low acculturated Latinas were more likely to believe that divine predestination (e.g., God's will/fate has destined certain individuals to develop BC) were causes of BC. These results suggest that acculturation level is related to Latinas BC cultural beliefs about BC.

In order to further establish discriminant validity, BCKT (Stager, 1993) was correlated to the LBCS scale and its subscales. Results revealed that the LBCS was negatively correlated to the BCKT, $r(142) = -.41, p = .0001$. Therefore, Latinas who held more traditional beliefs about BC also possessed less knowledge about BC in general and about its curability (see Table 14).

Furthermore, correlational analyses were conducted among the instruments used in this study. A significant correlation was found between the BCKT (Stager, 1993) and the fatalism inventory, $r(144) = -.35, p = .0001$, indicating that women with higher levels of BC knowledge were less likely to hold fatalistic views. A significant correlation was found between the BCKT and the CHAQ, $r(141) = -.22, p = .01$, indicating that women with higher BC knowledge scores were less likely to make cultural health attributions about health outcomes. A significant correlation was found between the fatalism inventory and the CHAQ, $r(142) = .47, p = .0001$, indicating that women who scored higher on fatalistic views also tended to make more cultural health attributions about health outcomes (see Table 15).

Criterion or predictive validity was examined by determining whether the LBCS was related or not to BC screening behaviors. We conducted multivariate analyses to determine whether the LBCS was able to explain significant BC screening variance above and beyond socio-demographic variables. First, a logistic regression analysis was conducted where the dependent variable constituted BSE in the past month (yes, no) and the independent variables constituted socio-demographic variables in the first step, followed by the LBCS subscales (i.e., Feeling Indecent: *female modesty*; Feeling Threatened: *relationships*; Feeling Healthy: *detrimental sources*; Feeling Healthy: *divine predestination*; Feeling Indecent: *shameful illness*; Feeling Healthy: *symptomatic illness*). The socio-demographic variables were not found to significantly predict BSE in the past month. In addition, the LBCS subscales did not significantly predict BSE in the past month (see Table 16).

Second, a hierarchical multiple regression analysis was conducted where the dependent variable was frequency of BSEs in the past year and the independent variables were the socio-demographic variables in the first step and the LBCS subscales entered in the second step. The F test for the demographic variables was not significant, $F(6, 137) = 2.1, p = .06$ and explained approximately 9% of the variance. Insurance coverage was found to be a significant predictor ($\beta = .77, p = .008$) for frequency of BSEs in the past year, such that Latinas who had healthcare coverage were less likely to report frequent BSEs. Income level was found to show a trend towards significance, ($\beta = .21, p = .06$), such that women with higher income levels were more likely to report frequent BSEs. The F test for the LBCS subscales after controlling for demographic variables was not significant, $F(12, 137) = 1.635, p = .09$ (see Table 17). Therefore, similar to BSE in the

past month, frequency of BSEs in the past year, were not significantly predicted by cultural health beliefs as measured by the LBCS.

Third, a hierarchical multiple regression analysis was conducted where the dependent variable constituted time since last mammogram and the independent variables constituted socio-demographic variables entered in the first step and the LBCS subscales entered in the second step. The F test for the demographics was found to be significant, $F(6, 138) = 2.3, p = .022$ and explained 11% of the variance in last mammogram. Specifically, age ($\beta = -.057, p = .006$) was found to significantly predict Latinas last mammogram, such that younger Latinas were more likely to indicate that they had undergone a recent mammogram compared to older Latinas. The overall F test for the LBCS subscales was found to be significant, $F(12, 138) = 2.3, p = .010$ and explained approximately 18% of the shared variance. The modesty subscale ($\beta = .076, p = .046$) was found to significantly predict last mammogram, indicating that women held greater traditional modesty BC cultural beliefs were less likely to have reported a recent mammogram. The LBCS relationships subscale ($\beta = -.15, p = .08$) showed a trend toward significance, indicating that women who scored lower on the relationship subscale, were more likely to report receiving a recent mammogram (see Table 18).

Fourth, a hierarchical multiple regression analysis was conducted where the dependent variable constituted plans for a future mammogram and the independent variables constituted socio-demographic variables entered in the first step and followed by the LBCS subscales in the second step. The F test for the demographic variables showed a trend towards significance, $F(6, 136) = 2.1, p = .057$. Specifically, total household income was found to significantly predict mammogram plans, ($\beta = .17, p =$

.016), such that Latinas who reported a higher income were less likely to report plans for a mammogram in the near future. The F test for the LBCS subscales was found to be significant, $F(12, 127) = 2.3, p = .011$ and explained 18% of the shared variance. The LBCS relationships subscale was found to significantly predict mammogram plans, ($\beta = -.08, p = .039$), indicating that Latinas with higher scores (more traditional) on the LBCS relationships subscale tended to report plans to have a mammogram in a distant future (see Table 19). The LBCS detrimental sources subscale was also found to significantly predict future plans for a mammogram, ($\beta = -.052, p = .048$), indicating that women who had more traditional beliefs about the link between detrimental sources causing cancer were less likely to report plans for a mammogram in the near future.

Lastly, a hierarchical multiple regression analysis was conducted where the dependent variable constituted last Pap smear (a proxy for CBE, given that both tend to be performed concurrently) and the independent variables were the socio-demographic variables entered in the first step, followed by the LBCS subscales in the second step. The F test for the demographic variables was significant, $F(6, 138) = 2.8, p = .012$ and explained 12% of the overall variance. Specifically, age was found to significantly predict Latinas last Pap smear, ($\beta = .04, p = .007$), such that older Latinas were more likely to indicate that they had not had a recent Pap smear. The F test for the LBCS subscales was found to be significant, $F(12, 138) = 2.17, p = .017$ and explained 17% of the shared variance. Specifically, the LBCS modesty subscale ($\beta = .07, p = .011$) was found to significantly predict last Pap smear, indicating that Latinas with higher traditional BC beliefs were more likely to indicate that they had not had a recent Pap smear (see Table 20). Therefore, traditional cultural health beliefs as measured by the

LBCS significantly predicted above and beyond socio-demographic variables last mammogram and Latinas' last Pap smear.

Chapter IV: Discussion

This three-phase study was conducted with self-identified Latinas, 40 years of age and older, who had never been diagnosed with BC. It was essential to target Latinas because compared to non-Latina women, Latinas in the U.S. have disproportional high mortality rates due to BC (Aldridge et al., 2006; Fernandez-Esquer et al., 2003). In addition, it has been found that BC is the most common cause of cancer and cancer-related mortality among U.S. Latinas (Abraido-Lanza et al., 2005; Katz et al., 2005; Smiley, McMillan, Johnson, & Ojeda, 2000). One contributing factor for this finding is that deaths from BC result largely from late-stage detection (Jacobellis & Cutter, 2002; Smith-Bindman et al., 2006).

Research has found that some of the reasons for lack of BC screening include low education levels, low socio-economic status, lack of healthcare coverage (Aldridge et al., 2006; De Alba, Hubbell, McMullin, Sweningson, & Saitz., 2004; Hunter et al., 2003), lack of BC and BC screening knowledge (Carter et al., 2002; George, 2000; Ramirez et al., 2000) fatalistic attitudes, limited English proficiency (Austin et al., 2002), and cultural factors such as beliefs, norms and values (Borrayo & Jenkins, 2001a; Borrayo & Jenkins, 2001b; Abraido-Lanza et al., 2005, Borrayo et al., 2005). The evidence, however, on how cultural factors specifically influence BC screening participation among Latinas is limited and thus inconclusive. In addition, there is a lack of consensus on how

to best measure and assess cultural factors (Abraido-Lanza et al., 2005). Because there is also a shortage of measures that assess cultural factors, currently there is no scale that measures cultural factors that influence Latinas beliefs about BC and BC screening. Therefore, the focus of this study was to develop a scale that would quantitatively measure related cultural factors among Latinas. More specifically, the goal of this study was to develop and test the Latina Breast Cancer Screening (LBCS) Scale.

Sample demographic characteristics

The majority of participants reported that they were born in Mexico (76% in phase II, 70% in phase III), tended to be married (62% in phase II, 68% in phase III), and tended to report that their monthly household income was \$1,000 or less (42% in phase II, 38% in phase III).

Medical Healthcare Coverage. Approximately 68% in phase II and 60% of Latinas in phase III reported that they did not have any form of medical health coverage, which is consistent with previous studies, where the majority of participants reported to be uninsured (57% to 61%; Hunter et al., 2003; Valdez et al., 2001). However, this finding is not consistent with other studies where fewer participants were uninsured (12% to 25%; Katz et al., 2005; Aldridge et al., 2006; Guerra, Krumholz, & Shea, 2005). Thus, the majority of the Latinas in our sample are likely to be medically underserved. The evidence across studies consistently indicates that ethnic minority women who lack health insurance are less likely to have access to medical services, in particular preventive health services such as BC screening (Aldridge et al., 2006; Coughlin & Uhler, 2002; Palmer, Fernandez, Tortolero-Luna, Gonzales, & Mullen, 2005; Wu et al., 2001).

Sample's BC screening behaviors

Mammography screening. In this study, several women reported that they had never received a mammogram in their lifetime. For example, 17% of Latinas in phase II and 20% of Latinas in phase III reported that they had never received a mammogram. All participants were eligible for screening since they were at least 40 years of age or older. Our findings are similar to those of other studies (Carter et al., 2002 ; Valdez et al., 2001; Wu et al., 2001), which have found that between 16% to 25% of Latinas had never had a mammogram. The high percentage of Latinas without ever receiving a mammogram is likely to be related to our findings that a high percentage of them lacked health care coverage. In this study, we found that never having had a mammogram was significantly associated with insurance coverage, such that women who reported never having had a mammogram or not receiving a recent one were more likely to report not having health insurance coverage.

Breast Self Exams. According to the ACS, women over the age of 40 should perform at least one BSE per month. However, in this study only 17% of the participants in phase II and 19% in phase III reported that they had performed 10-12 BSEs in the past year (which is approximately equivalent to one per month). Moreover, 49% of the participants in phase II and 57% in phase III reported that they had performed a BSE in the past month. These findings are similar to those of other studies which have found that between 57% and 58% of Latinas in their sample had performed a BSE the previous month (Borrayo, Thomas, & Lawsin, 2004; Buki, Borrayo, & Feigal, 2004; Guerra et al., 2005). This finding suggests the possibility that at least half of the population of Latinas are not adhering to the guidelines set by the ACS. Therefore, not only should the message sent by the healthcare community emphasize the importance of mammograms, but also

the necessity for Latinas to perform at least one BSE per month.

Clinical Breast Exams and Pap smears). The ACS recommends a yearly Pap smear for all women over the age of 18 years (ACS, 2002a). A common medical practice is to also perform a CBE during routine yearly Pap smears and thus, a Pap smear is a reliable proxy to estimate women's CBE practices. In phase II of the study approximately 4% of Latinas reported never having had a Pap smear and approximately 3% of Latinas in phase III reported never having had a Pap smear. Thus, most participants in phase II (96%) and phase III (97%) reported having had a Pap smear in their lifetime. More encouraging, 65% of participants in phase II and 66% in phase III reported having had a Pap smear a year ago or less than a year ago. Others have found that approximately 69% to 89% of Latinas report having had at least one Pap smear in their life (ACS, 2002b; Carter et al., 2002; Coughlin & Uhler, 2002). Thus, Latinas in this study were more likely to report having had a Pap smear in their lifetime compared to Latinas in other studies.

LBCS Scale Development Procedures. The LBCS was developed using similar item generation and content validity methods used by other researchers in scale development (Stager, 1993; Wells, Bush, & Marshall, 2001; Zheng, Hall, Dugan, Kidd, & Levine, 2002; Champion 1993; Kindree et al., 1997; Murguia et al., 2000) and item development recommendations (DeVillis, 1991). For example, the item generation was based on initial inductive qualitative findings regarding BC cultural beliefs and based on a previous extensive literature review in relation to BC screening beliefs that have been found to be prevalent among Latinas (Borrayo & Jenkins, 2001a; 2001b; Borrayo et al., 2005). Content validity was established by having a research team review the items for relevancy, accuracy and wording of the items. Next, undergraduate research assistants

coded items based on which construct and dimension each item described. To further establish content validity, two trained graduate students who were not part of the item generation stage also categorized items based on which construct and dimension each item appeared to describe.

Once the items (60-item version and 80-item version) were tested with 288 Latinas, the items were evaluated. Specifically, a principal components analysis was used to determine the dimensionality of items by inspecting eigenvalues greater than 1, a standard procedure that has been used in other similar studies (Wells et al., 2001; Thompson et al., 2003; Rakowski et al., 1997). In addition, scree plots were inspected to determine the number of factors to extract as recommended by DeVillis (1991). Similar to other studies (Thompson et al., 2003), factor loadings above .40 were retained while loadings below .40 were eliminated.

According to DeVillis (1991), one of the most important indicators of a scale's strength is the reliability coefficient, alpha. Therefore, reliability analyses were also used to reduce the scale from the initial item pool. In accord with the recommendations, items that contribute the least to the overall internal consistency should be the first to be considered for elimination. Therefore, subscales with relatively low internal consistency were eliminated and subscales with adequate to good internal consistency were retained.

Prior to phase III of the study, a pilot test was conducted. Pilot testing is also an essential component in scale development and used by past studies (Zheng et al., 2002). It is particularly important to pilot test written scales with low literacy populations (less than high-school education) because scales tend to be developed by researchers whose level of literacy is much higher (college or higher level of education). Approximately, 20

women took part in the pilot test where they were asked to complete the instrument and note any items that were poorly worded or unclear, and to provide comments regarding the length of the entire instrument. Most of participants' recommendations were used to modify the final version of the instrument to be tested in phase III.

Hypotheses

Hypothesis 1. It was hypothesized that separate factors would be identified in the LBCS using principal components analysis. The optimal number of factors to extract was determined by scree plots, eigenvalues, and parallel analyses. The goal was to reduce the items for the final LBCS scale, with each item loading on only one of three latent constructs (i.e., Feeling Healthy, Feeling Indecent, and Feeling Threatened). Therefore, to test all the items (60-80) and reduce them, the scale was administered to 288 self-identified Latinas. We were successful at accomplishing six distinct factors, therefore contributing to the scale's construct validity. After a series of principal components analyses and reliability analyses the scale was reduced to 36 items instead of the 28 items initially anticipated. Overall, the results did not support the hypothesis that items would load onto three distinct constructs. Instead, the items loaded on six distinct factors, which is understandable because all of the items were created to tap distinctly into the constructs' sub-categories rather than indiscriminately into the three latent constructs.

Hypothesis 2. Once a scale has been reduced, it is essential to test it to determine its reliability and validity. Therefore, in order to establish convergent validity, it was hypothesized that the LBCS scale would correlate with the shortened version of the ARSMA's General Acculturation Index. No significant relationship was found between the overall LBCS subscale and the acculturation index. However, significant correlations

were found between the detrimental external sources and divine predestination subscales and acculturation, indicating that that low acculturated Latinas were more likely to believe that detrimental sources (i.e., alcohol) and divine predestination (i.e., God's will) influence BC development. The other four LBCS subscales were not found to be significantly associated to acculturation. This may have been due to insufficient response variability. In other words, there was not a sufficient number of participants who ranged from low to highly acculturated, nor was there an equal number of U.S. born versus non-U.S. born participants. Specifically, most participants were born in Latin America, an indication that they might be low in acculturation to the mainstream U.S. society.

One other explanation for not finding a relationship between acculturation and four of the LBCS subscales may be that the unidimensional ARSMA measure may have not been adequate to capture the entire realm of acculturation experiences. Acculturation is a multifaceted construct that should be measured across dimensions (Suarez & Pulley, 1995). Multidimensional acculturation measures tend to assess different aspects of acculturation (e.g., language, value of cultural origin, generation status, length of time living in the U.S, proportion of friends who are Latino), which were not assessed in this study. Another possible explanation for the lack of relationship between acculturation and the LBCS subscales is that acculturation is a concept that yields mixed findings regarding its relationship to BC screening behaviors among Latinas (Abraido-Lanza et al., 2005; Borrayo, 2004). Abraido-Lanza et al. (2005) indicate that different measures of acculturation predict screening behaviors inconsistently. Several studies in the past decade (Laws & Mayo, 1998; Zambrana et al. 1999; Wu et al., 2001; Ramirez et al., 2000) have found no relationship between acculturation level and recent BC screening

behavior. In comparison, a few other studies have found that acculturation was significantly associated with having recently participated in BC screening (Coe et al., 1994), although this effect tends to disappear after controlling for socio-demographic factors. Therefore, the findings in the current study and previous studies tend to suggest that acculturation level might not be a consistent or strong predictor of BC screening behaviors. One suggestion is for future research studies to utilize a multidimensional acculturation scale versus a one-dimensional scale to better explore the relationship between acculturation and BC screening beliefs and behaviors.

Hypothesis 3. In order to establish additional evidence for the LBCS scale's construct and convergent validity, it was hypothesized that scores on LBCS (e.g., provider behavior items) would correlate with the medical mistrust items from the GBMMS. As expected, the LBCS female modesty subscale was significantly correlated to medical mistrust, such that women who tended to hold more traditional beliefs about the propriety of their providers behavior also tended to be more distrustful of medical personnel and medical settings. For example, the GBMMS item that stated, "People of my ethnic group should not confide in doctors/ health care workers because it will be used against them" was significantly correlated with the LBCS items that indicated that they felt more comfortable with female physicians than male physicians (a behavior that is culturally sanctioned as more appropriate). These findings supported the hypothesis that medical mistrust would be significantly related to the LBCS items and more specifically, the provider behavior items. Thus, the significant relationships between medical mistrust and provider behaviors also provide evidence for the construct and convergent validity of the LBCS scale. These findings are consistent with those from

Thompson et al. (2003) who found that Latinas more traditional in their beliefs tend to be more mistrustful, possibly as a result of limited contact with conventional health care systems or mainstream health information. This finding suggests that medical mistrust among traditional Latinas does play a role in their BC screening behaviors.

Hypothesis 4. In order to establish evidence of discriminant validity for the LBCS, it was hypothesized that the LBCS would be significantly related to the BCKT questionnaires (Stager, 1993; McCance et al., 1990). In this study, McCance et al.'s scale was found to have a low reliability suggesting that it could not be used as a scale, and therefore, it was dropped from any analyses. However, as predicted, the LBCS was found to be negatively correlated with Stager's (1993) BCKT scale. Women with greater traditional health beliefs about BC symptoms and BC causes were likely to display lower BC knowledge. This finding indicates that women who held greater traditional beliefs possessed lower BC and BC curability knowledge as measured by Stager's (1993) BCKT scale. Past research has found that Latinos who are traditional in their beliefs tend to report that bruises from being hit, food additives, and drinking coffee are causes of cancer. Perez-Stable et al. (1992) found that Latinos who were more likely to have these beliefs about cancer causes also had less knowledge about the symptoms of cancer.

Hypothesis 5. Finally, in order to test the fifth hypothesis and examine the predictive validity of the LBCS, a logistic regression analysis and a series of hierarchical multiple regressions were conducted. The dependent variable was a woman's self-report on her BC screening behaviors (e.g., mammography, BSE, and Pap smear). BSE was measured according to how many times women reported performing BSEs in the last year (1-12+ times a year), while mammography and CBE were measured with women's

report of the last time they obtained a mammogram or a CBE (last year, 2 years ago, 3 years ago, more than 3 years ago, or never). The independent variables were the socio-demographic variables (age, education, employment, insurance coverage, income and place of birth) entered in the first step followed by the six LBCS subscales.

A logistic regression was conducted where the dependent variable constituted BSE in the past month (yes, no). None of the demographic variables were found to significantly predict BSE in the past month. In addition, the LBCS subscales were not found to significantly predict Latina's BSE behavior in the past month.

Next, a hierarchical multiple regression was conducted where the dependent variable constituted frequency of BSEs in the past year (0-12+ times). Findings revealed that insurance coverage was a significant predictor of frequency of BSEs, such that Latinas without medical healthcare coverage were more likely to conduct frequent BSEs. One explanation may be that women without healthcare coverage, who may not be able to visit a doctor or have coverage for regular mammograms, are more likely to engage instead in self-care behaviors such as BSE. Similarly to the results for BSEs in the past month, cultural health beliefs as measured by the LBCS subscales were not found to significantly predict BSEs in the past year.

A hierarchical multiple regression was conducted where the dependent variable was women's self-report of the time when they obtained their last mammogram. The overall model was found to be predictive of last mammogram and explained approximately 18% of the variance. Specifically, age and the female modesty as measured by the LBCS were found to be significant predictors of last mammogram. This finding indicates that younger Latina women in this study were more likely to report

not having received a recent mammogram or never having received one at all.

Furthermore, women who held greater female modesty beliefs (e.g., embarrassment during an exam, discomfort with a male medical provider) surrounding BC screening behaviors were less likely to report a recent mammogram. This result suggests that the LBCS modesty subscale can be used to predict mammography screening behaviors.

Next, a hierarchical multiple regression was also conducted where the dependent variable was plans to obtain a future mammogram. It was found that the overall model which included socio-demographic variables and the LBCS explained 18% of the variance in plans to obtain a mammogram. Specifically, income was found to be significant predictor of plans to obtain a mammogram such that women with higher income levels were less likely to report plans for a mammogram in the near future. One explanation for this finding may be that women with higher income levels tend to have healthcare coverage therefore they may have had a mammogram in the past year or more recently and thus do not plan to obtain a mammogram in the near future. The LBCS relationships subscale and detrimental sources subscale were also found to significantly predict plans for a future mammogram. Therefore, Latinas who held more traditional beliefs about the impact of obtaining a mammogram on relationships (e.g., partner's disapproval) were less likely to report plans for a mammogram in the near future. In addition, Latinas who reported traditional beliefs about the link between detrimental external sources (e.g., breast injury, caffeine consumption) causing cancer were less likely to report plans for a mammogram in the near future. These findings are consistent with a well established body of evidence regarding the influential role on health related behavior (e.g., BC screening) that social and structural characteristics (e.g., low SES;

Fulton et al, 1995; Valdez et al, 2001) may have over individuals' intrinsic characteristics (e.g., cultural beliefs, values, norms).

Lastly, a hierarchical multiple regression was conducted to predict last Pap smear. The overall model which included socio-demographic variables and the LBCS explained 17% of the variance in last Pap smear. Age was found to significantly predict last Pap smear, such that older Latinas in this study were more likely to report not having received a recent Pap smear or never having received one at all. The LBCS modesty subscale was found to significantly predict last Pap smear such that women who held greater female modesty beliefs (e.g., embarrassment during an exam, discomfort with a male medical provider) surrounding a Pap smear screening behaviors (e.g., CBEs) were less likely to report a recent Pap smear.

In conclusion, the LBCS scale was found to be a reliable and valid scale capable of being utilized among medically underserved Latinas to measure the extent to which they hold traditional cultural health beliefs about BC and BC screening. Convergent validity for the LBCS scale was adequately established using other reliable measures (i.e., GBMMS items, the Fatalism Inventory, and CHAQ). Furthermore, the LBCS was also found to have adequate discriminant validity using other reliable measures (i.e., BCKT knowledge and curability subscales).

Study Limitations

It should be acknowledged that one limitation of the study might be the potential of recall biases in the reported use of mammograms among women. Recall biases may be more problematic among older women (Wu et al., 2001). For example, older women may have difficulty in recalling the date of their last mammogram. Given that the data are

based on self-report, this variable may be subject to desirability response bias, in which participants tend to overestimate the frequency of screening and try to answer in the way they think the interviewer would prefer (Ramirez et al., 2000). Past research has found that participants sometimes overestimate early detection procedures. For example, Hiatt et al. (1995) found that self reported data on early cancer detection when compared with procedures documented in their medical records, were substantially overestimated among Latinas.

In addition, low levels of literacy have been found to be a barrier to participating in research and understanding health knowledge. Guerra et al. (2005) found that 70% of Latinas had inadequate or marginal functional health literacy. Health literacy was found to be significantly associated with having ever had a mammogram which suggests that Latinas with poor functional health literacy are less likely to undergo mammography.

Another study limitation may have been that participants were recruited only from Colorado, therefore limiting generalizations to other Latinas in the United States and around the world. It is also important to acknowledge that based on Colorado demographics, the majority of women who participated in this study were largely of Mexican descent. Therefore, the results may need to be cautiously generalized to other Latina subgroups. Furthermore, it needs to be recognized that some participants were recruited at health fairs or health centers and these women may be different from Latinas who do not frequently attend these settings.

This study may also be limited because some of the measures (i.e., BCKT's) that were utilized have not been normed with Latina women. Therefore, it was important to run reliability analyses with all of the scales used with our sample. Most of the scales

demonstrated adequate to strong internal consistency, with the exception of the BCKT (McCance et al., 1990) and the GBMMS measure. It was found that the reliabilities for the BCKT (McCance et al., 1990) and the GBMMS scale were relatively low. The low reliability of the BCKT may be a result of the required health literacy needed to respond to the questions in this test. Because low SES Latinas may lack even basic BC and BC screening knowledge, the BCKT items might be very challenging to respond to based on actual knowledge or lack thereof. The GBMMS may have demonstrated low reliability because, based on feedback we obtained from pilot study participants, we eliminated several of the items and shortened it to include only five items. In addition, the authors of the GBMMS (Thompson et al., 2003) also found low internal consistency for the lack of provider support subscale, which may be due to its small number of items. They recommend that results involving this subscale be interpreted with caution.

Another limitation was that the study was not successful in obtaining an adequate representation of women who varied from low to high acculturation thus limiting variability on this construct among study participants. This may partially explain why only two of the LBCS subscales were found to be significantly related to acculturation. Instead, the use of a more comprehensive or multidimensional measure of acculturation may have provided significant results (Suarez & Pulley, 1995). Likewise, our results might have been significant if women in our sample displayed more variability in their language proficiency (most were Spanish-speaking) and place of birth (most were born in Mexico), both also indicative measures of acculturation experiences.

The low literacy of participants needs to be acknowledged as a potential limitation in this study. Understanding written questions about health related topics, such as

questions about BC and BC screening, requires a certain degree of health literacy (Mead, Diekmann, & Thornhill, 1992; Michielutte, Alciati, & el Arculli, 1999) A large percentage of Latinos, as many as 62%, have inadequate or marginal health literacy levels compared to 35% of their non-Latino counterparts (Williams, Parker, & Baker, 1995). In this study, we did not assess health literacy per se, but the participants had low education levels (8.5 years on average in phase II and 9.6 years on average in phase III). Consequently, we found that several women required help from a research assistant who verbally read each item in the questionnaire to them. It is important to acknowledge that despite the fact that research assistants attempted to not introduce bias by only reading the items and not providing their opinion or interpretation, participant's responses may have been influenced by the presence of a researcher. Furthermore, they may have been less candid in their responses compared to the women who completed the self-report questionnaire on their own.

Implications and contributions

BC screening behaviors are one of the most effective methods to detect BC at its early stages. Thus, obtaining recommended regular mammography screening could potentially reduce the prevalence of advanced-stage disease and, in turn, reduce the BC mortality rates among Latinas. In other words, increased adherence particularly among never-screened or infrequently screened women may enable the discovery of BC tumors before they have progressed to an advanced stage when mortality from BC is likely to occur. Efforts should focus on reducing structural access and socioeconomic barriers while increasing efforts to provide BC screening education and detection interventions for medically underserved Latinas. In addition, efforts should be made to make

interventions more congruent with common cultural health beliefs, and values and norms related to Latinas participation in BC early detection procedures.

Often times intervention programs are developed with little concern for the real issues that affect BC screening participation. It is important that researchers and healthcare personnel be responsive to the specific needs of Latinas. Therefore, it is crucial that BC interventions targeted toward Latinas take into account cultural health beliefs, values, and norms when developing and implementing preventive screening interventions. For example, physicians should be aware that Latinas may respond differently to their medical recommendations based on how they conceptualize BC and how they feel about participating in BC screening procedures. For example, Latinas tend to feel more comfortable with female physicians. Therefore, medical settings that tend to serve Latinas should ensure that physicians and medical assistants are primarily women.

Moreover, the LBCS scale can aid in assessing whether women tend to hold more traditional beliefs in order to address them in an effort to increase their BC screening behaviors. It is advised that healthcare personnel become more knowledgeable about Latinas' cultural concerns so that they can make appropriate recommendations for mammography screenings that are sensitive to Latinas' cultural health beliefs and potentially alleviate any fears they may have (e.g., BC fatalistic views). Furthermore, bilingual health educators could be designated to address preventive healthcare needs, conduct screenings, or provide referrals while patients are in the waiting area. Medical based advertisements (i.e., posters and brochures) or educational videos that are culturally and literacy appropriate can be placed at medical settings which may prompt women to follow-up with recommendations for BC screening procedures. In addition, it is crucial to

place advertisements in other settings where Latinas are likely to be (i.e., Churches, Flea markets, grocery stores). For women who have no usual source of care or who have little or no contact with physicians, community outreach programs could be an effective way to teach the importance of early BC detection.

In the U.S. there is considerable need for culturally competent health care services for ethnically diverse populations. Health disparities (e.g., lack of access to preventive medicine) can be alleviated, in part, by creating culturally consistent healthcare systems. According to Anderson, Scrimshaw, Fullilove, Fielding and Normand (2003) a culturally competent healthcare system should include the following: availability of culturally diverse staff, provision of translators who speak the patient's language, training of staff about the culture and language of the individuals they serve, and dissemination of literature in the patients' language and consistent with their cultural norms. Culturally competent healthcare systems are one of the overarching goals of Healthy People 2010 in an effort to help eliminate health disparities. The Healthy People 2010 objective for mammography is to increase the proportion of all women 40 and older who received a mammogram within the previous two years to 70%. Continued efforts are needed to ensure that underserved Latinas meet this goal through improved health care access.

Finally, BC prevention efforts should focus on increasing awareness among medical healthcare providers and Latinas about cultural health beliefs (i.e., Feeling Healthy, Feeling Indecent, Feeling Threatened) that need to be sensitively integrated in the delivery of education and screening interventions. This study provides a contribution to the literature on Latinas BC cultural health beliefs through the development of a scale that measures cultural health beliefs, values, and norms that previous studies have alluded

to but have not been able to measure. Overall, intervening at the psychosocial and cultural level might prove to be more cost-effective and attainable than trying to address broader social inequalities such as poverty, lack of health insurance, and denial of services due to immigration status.

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Appendix A

Socio-Demographics Questionnaire

1. How old are you? _____ [Years]
2. In what country were you born? _____
3. How long have you lived in the United States? _____ Years _____ All my life
4. Your current marital status? [Circle **one** answer]
 Single [never married] Married Divorced Separated Co-habiting [live with partner]
 Widowed
5. Where did you do most of your schooling? Latin America _____ or USA _____
6. Are you now employed? ____ Yes ____ No Are you retired? ____ Yes ____ No
7. What is/was your occupation? _____
8. Do you have: Medicare? ____ Medicaid? ____ Private Insurance? ____ None? ____
9. How many people live in your household? _____
10. Circle the range that best describes your monthly income:
 None Less than \$1,000 \$1,001 - \$2,000 \$2,001 - \$3,000 \$3,001-\$4,000
 More than \$4,000
11. Place an 'X' in the box that best described the highest level of education you completed:

Grade School								High School				College				Post Graduate
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	

Appendix B

Breast Cancer Screening Items-English version

Section II

Circle **one** answer for each question:

1. Have you ever been diagnosed as having any type of cancer? Yes No
 1a. If you circled yes, what type of cancer? _____
2. Has any blood relative of yours ever had breast cancer? Yes No
 2a. If you circled yes, what relative? _____
3. Has a doctor or nurse taught you how to examine your breasts? Yes No
4. Have you examined your breasts in the past month? Yes No
5. How many times have you examined your breasts in the past year? 0 1-2 3-5 6-9 10-12
6. Has a doctor recommended for you to have a mammogram? Yes No
7. When was your last mammogram?
 Less than Last 2 years 3 years More than 3 Never
 1 year Year ago ago years ago had one

8. I plan to get a mammogram in...

Choose **one** of the answers:

- A few weeks (1-4 weeks) _____
- A few months (less than 12) _____
- A few years (in about 1 or 2 years) _____
- A distant future (3 or more years) _____

9. When was your last pap smear?

- Less than Last 2 years 3 years More than 3 Never
1 year Year ago ago years ago had one

Appendix C

General Acculturation Index-English version

1. Do you speak----->

Only Spanish	Spanish better than English	Both Spanish and English equally well	English better than Spanish	Only English
--------------	-----------------------------	---------------------------------------	-----------------------------	--------------

2. Do you read----->

Only Spanish	Spanish better than English	Both Spanish and English equally well	English better than Spanish	Only English
--------------	-----------------------------	---------------------------------------	-----------------------------	--------------

3. Was your early life [childhood and teenage years] spent in----->

Only in Latin América	Mostly in Latin América	Equally in Latino América and USA	Mostly in the USA	Only in the USA
-----------------------	-------------------------	-----------------------------------	-------------------	-----------------

4. Is your current circle of friends----->

Almost all Hispanics/ Latinos	Mainly Hispanics/ Latinos	Equally Hispanics & Non-Hispanics from the U.S.A.	Mainly Non-Hispanics from the U.S.A.	Almost all from USA
-------------------------------	---------------------------	---	--------------------------------------	---------------------

5. In relation to having an Hispanic/Latino background, do you feel----->

Very Proud	Proud	Somewhat Proud	Little Pride	No Pride
------------	-------	----------------	--------------	----------

Appendix D

Latina Breast Cancer Screening Scale

Circule una respuesta por pregunta:

1. Voy a hacerme el examen del seno solo si le tengo confianza al doctor.....	Si	No	Talvez
2. El cáncer del seno es mayormente hereditario.....	Si	No	Talvez
3. Las mujeres se sienten más cómodas cuando una doctora examina sus senos....	Si	No	Talvez
4. En mi familia estarían avergonzados de mí si me diera cáncer del seno.....	Si	No	Talvez
5. Tener relaciones sexuales sin casarse podría ser castigado con una mala enfermedad como el cáncer del seno.....	Si	No	Talvez
6. Una mujer debe de preocuparse del cáncer solo si siente una bolita en su seno....	Si	No	Talvez
7. Yo debo preocuparme del cáncer del seno solo si tengo algún dolor en mis senos	Si	No	Talvez
8. Las mujeres que son buenas personas rara vez se enferman de cáncer del seno....	Si	No	Talvez
9. Me preocupo del cáncer del seno aunque nadie en mi familia lo ha tenido.....	Si	No	Talvez
10. Si me diera cáncer del seno mi esposo me dejaría.....	Si	No	Talvez
11. Si tuviera cáncer del seno yo me sentiría avergonzada de decirles a mis amigas.	Si	No	Talvez
12. Si yo tuviera cáncer del seno mi esposo podría dejar a nuestra familia.....	Si	No	Talvez
13. El tomar mucho café causa cáncer del seno.	Si	No	Talvez
14. Si diste pecho a tu bebe, te puede dar cáncer del seno.....	Si	No	Talvez
15. Yo debería chequearme los senos a pesar de que mi mama nunca tuvo cáncer del seno.	Si	No	Talvez
16. Yo sentiría vergüenza si mis amigas supieran que tengo cáncer del seno.....	Si	No	Talvez
17. Es cosa de Dios si a una mujer le da cáncer del seno.....	Si	No	Talvez
18. Me sentiría mujer aun cuando tuviera solo un seno.....	Si	No	Talvez
19. Dar pecho incorrectamente puede después causar cáncer del seno.....	Si	No	Talvez

20. Las doctoras entienden a las mujeres mejor que los doctores varones.....	Si	No	Talvez
21. Estoy segura que me moriría si me diera cáncer del seno.....	Si	No	Talvez
22. Me siento cómoda hablando con cualquier doctor sobre la salud de mis senos...	Si	No	Talvez
23. Si tuviera cáncer del seno preferiría no decirle a mi esposo.....	Si	No	Talvez
24. Las doctoras son más cuidadosas que los doctores varones cuando examinan los senos.....	Si	No	Talvez
25. Yo esperarí a sentir algún dolor antes de ir a que me examinen los senos.....	Si	No	Talvez
26. Si una mujer tiene cáncer del seno, ella podría perder a su esposo.....	Si	No	Talvez
27. Me molesta estar a solas con un doctor varón.....	Si	No	Talvez
28. Es mejor que una mujer se entere si esta enferma de cáncer.....	Si	No	Talvez
29. Yo debería hacerme regularmente un examen de los senos si hay mujeres en mi familia con cáncer del seno.....	Si	No	Talvez
30. Me siento incomoda yendo a ver a un doctor varón.....	Si	No	Talvez
31. Es mejor ir a una doctora si es para hacerse un chequeo de cáncer del seno.....	Si	No	Talvez
32. Las mujeres que comen mucha comida procesada les puede dar cáncer del seno	Si	No	Talvez
33. Es mejor para una mujer saber si tiene cáncer del seno.....	Si	No	Talvez
34. La leche materna que se deja en los pechos luego puede causar cáncer del seno.	Si	No	Talvez
35. Las doctoras entienden el cuerpo de las mujeres mejor porque ellas también son mujeres.....	Si	No	Talvez
36. Tomar bebidas alcohólicas me puede causar cáncer del seno.....	Si	No	Talvez
37. A las mujeres que hacen maldades les da cáncer del seno.....	Si	No	Talvez
38. Me da vergüenza cuando me tocan para hacerme un examen clínico del seno ...	Si	No	Talvez
39. Mi pareja me dejaría de amar si me diera cáncer del seno.....	Si	No	Talvez
40. Solo Dios decide si una mujer con cáncer del seno se mejora.....	Si	No	Talvez
41. Yo le tengo mas confianza a un doctor que habla español.....	Si	No	Talvez

42. Yo sentiría que soy una mujer completa aun al perder mis senos por el cáncer...	Si	No	Talvez
43. Lastimarse los senos causa cáncer del seno.	Si	No	Talvez
44. Me da vergüenza enseñar mis senos cuando me hacen un examen del seno.....	Si	No	Talvez
45. Dios tendría sus razones si me diera cáncer del seno.....	Si	No	Talvez
46. Mi pareja se quedaría conmigo aun si me faltara un seno.....	Si	No	Talvez
47. Una mujer con cáncer del seno tiene esperanzas de sanarse.....	Si	No	Talvez
48. Un doctor varón empieza a pensar cosas malas si me toca los senos por demasiado tiempo.....	Si	No	Talvez
49. Me sentiría mas cómoda hablando con una doctora sobre el cáncer del seno.....	Si	No	Talvez
50. Preferiría que me dijeran si me diera cáncer del seno.....	Si	No	Talvez
51. No hay nada que se pueda hacer si me diera cáncer del seno.....	Si	No	Talvez
52. Perder un seno haría que me vea como un hombre.....	Si	No	Talvez
53. Me da temor saber si tengo un problema de salud como cáncer del seno.....	Si	No	Talvez
54. Tocarse uno mismo aunque sea para examinarse el seno es incorrecto.....	Si	No	Talvez
55. Debería ir a que me examinen de cáncer del seno si tengo algún síntoma.....	Si	No	Talvez
56. Ni aun un doctor debe tocarme los senos, solamente mi pareja puede hacerlo....	Si	No	Talvez
57. Las mujeres con cáncer del seno traen vergüenza a su familia.....	Si	No	Talvez
58. Las pastillas anticonceptivas causan cáncer del seno.....	Si	No	Talvez
59. Solamente Dios puede decidir si me da cáncer del seno.....	Si	No	Talvez
60. Dios es el único que puede sanar a los enfermos de cáncer.....	Si	No	Talvez
61. Me da vergüenza hablar sobre enfermedades como el cáncer del seno.....	Si	No	Talvez
62. Con un buen tratamiento puede una mujer con cáncer del seno mejorarse.....	Si	No	Talvez

63. El cáncer del seno es un castigo para las personas que son malas.....	Si	No	Talvez
64. Tengo un doctor en quien confio cuando mi salud me preocupa.....	Si	No	Talvez
65. Yo evito pensar que me puede dar una enfermedad como el cáncer del seno.....	Si	No	Talvez
66. Me sentiría menos mujer si perdiera mi pelo debido a un tratamiento de cáncer..	Si	No	Talvez
67. El cáncer del seno es una prueba de fe de Dios.....	Si	No	Talvez
68. Porque soy una buena persona, seria raro que me diera cáncer del seno.....	Si	No	Talvez
69. Si algún familiar tuvo cáncer, hay razones para hacerme un examen del seno....	Si	No	Talvez
70. Las buenas obras son recompensadas con salud y las malas con enfermedad.....	Si	No	Talvez
71. Obtener un examen del seno es difícil porque a los doctores les gusta verle el cuerpo a las mujeres.....	Si	No	Talvez
72. Yo espero sentirme enferma para ir a ver a un doctor.....	Si	No	Talvez
73. Les tengo desconfianza a los doctores porque no entiendo las palabras difíciles que usan.....	Si	No	Talvez
74. Si te has lastimado los seno debes ir a que te hagan un examen porque te puede dar cáncer.....	Si	No	Talvez
75. Debo preocuparme del cáncer del seno si siento alguna molestia en mis senos...	Si	No	Talvez
76. A las mujeres decentes les da vergüenza que el doctor las examine desnudas.....	Si	No	Talvez
77. Dar pecho al bebe por demasiado tiempo puede causar cáncer del seno.....	Si	No	Talvez
78. Siento que debo de evitar ver mi cuerpo desnudo aunque sea para hacerme un auto-examen de los senos.....	Si	No	Talvez
79. Es incorrecto que un doctor varón examine los senos de una mujer.....	Si	No	Talvez
80. Si hay historia de cáncer en mi familia debo hacerme seguido el examen del seno.....	Si	No	Talvez

Appendix E

Breast Cancer Knowledge Test (Stager, 1993)

General Knowledge

1. A hard blow to the breast may cause a woman to get breast cancer later in life.	Yes	No	Maybe
2. The constant irritation of a tight bra can, over time, cause breast cancer.	Yes	No	Maybe
3. One out of every 10 women in the United States will get breast cancer sometime during her life.	Yes	No	Maybe
4. In some women, being overweight raises the risk of developing breast cancer.	Yes	No	Maybe
5. A woman who bears her first child before the age of 30 is more likely to develop breast cancer than a woman who bears her first child after the age of 30.	Yes	No	Maybe
6. Women with no known risk factors for breast cancer rarely get breast cancer.	Yes	No	Maybe
7. Some types of fibrocystic breast disease (noncancerous breast lumps) increase a woman's risk of breast cancer.	Yes	No	Maybe
8. Breast cancer is more common in 65 year old women than in 40 year old women.	Yes	No	Maybe
9. The most frequently occurring cancer in women is breast cancer.	Yes	No	Maybe
10. Women over age 70 rarely get breast cancer.	Yes	No	Maybe
11. Most breast lumps are cancerous.	Yes	No	Maybe

Curability

1. For many women, breast cancer can now be successfully treated without breast removal (mastectomy).	Yes	No	Maybe
1. By the time a cancerous breast lump is painful, it is too late to be successfully treated.	Yes	No	Maybe
2. Breast cancer is sometimes treated successfully by removal of the lump (lumpectomy) and radiation therapy.	Yes	No	Maybe
3. Breast cancer is less likely to be cured in women with a family history of breast cancer than in women with no family history of breast cancer.	Yes	No	Maybe
4. By the time a woman can feel a cancerous breast lump, it is too late to treat it effectively.	Yes	No	Maybe
5. Even if breast cancer is caught very early, the chances for cure are much better if the whole breast is removed.	Yes	No	Maybe
6. Even if detected and treated early, a woman with breast cancer is unlikely to live a normal life span.	Yes	No	Maybe

Appendix F

Breast Cancer Knowledge Test (McCance, Mooney, Smith & Field, 1990)

1. If you are postmenopausal, how often should you do breast self examination:
 (a) each week (b) once a month (c) every three months (d) don't know

2. Most breast lumps are found by
 (a) women themselves (b) physician (c) mammogram (d) don't know

3. At what age should a young woman begin doing breast self-examination:
 (a) 20 (b) 30 (c) 35 (d) don't know

4. A woman who regularly feels her breasts is doing one of the most effective methods of breast cancer detection. Yes No Don't Know

5. Mammography can detect lumps that can't be felt Yes No Don't Know

6. If a woman gets regular mammography, she does not need to do BSE or have physical examinations. Yes No Don't Know

7. Mammography is recommended yearly for women over 50 years old Yes No Don't Know

8. Using the palm of your hand is the most effective method for detecting a breast lump. Yes No Don't Know

9. Breast self examination should be performed during your period when lumps are most easily detected. Yes No Don't Know

10. An important part of breast self-examination is looking at your breast in the mirror. Yes No Don't Know

11. Breast self-examination should include feeling for lumps under your arm. Yes No Don't Know

12. Squeezing the nipple is necessary for a good examination. Yes No Don't Know

Appendix G

The Group-Based Medical Mistrust Scale (GBMMS) (Thompson, Valdimarsdottir, Winkel, Jandorf & Redd, 2004)

1. People of my ethnic group cannot trust doctors and health care workers.	Yes	No	Maybe
2. People of my ethnic group should be suspicious of information from doctors and health care workers.	Yes	No	Maybe
3. People of my ethnic group should not confide in doctors and health care workers because it will be used against them.	Yes	No	Maybe
4. People of my ethnic group are treated the same as people of other groups by doctors and health care workers.	Yes	No	Maybe
5. I have personally been treated poorly or unfairly by doctors or health care workers because of my ethnicity.	Yes	No	Maybe

Appendix H

Revised Fatalism Inventory

1. If someone gets breast cancer it was meant to be.
2. If someone gets breast cancer they will get it no matter what they do.
3. If someone is meant to have breast cancer they will have breast cancer.
4. If someone was meant to have breast cancer it doesn't matter what the doctor tells them to do, they will get breast cancer anyway.
5. If someone gets breast cancer it is part of God's plan.
6. If someone gets breast cancer it doesn't matter when they find out about it, they will still die.
7. If someone has breast cancer it is already too late to do anything about it.
8. If someone gets breast cancer their time to die is near.
9. If someone gets breast cancer that's the way they were meant to die.
10. If someone gets breast cancer a lot of different treatments won't make any difference.
11. Breast cancer kills most people who get it.

Appendix I

Latino Cultural Health Attributions Questionnaire (CHAQ)

A. José is a very sexually active 42-year-old man. He has fathered three children out of wedlock and continues to refuse to wear a condom. Recently, José has discovered he is HIV positive.

What are some of the reasons José developed the virus that may develop into AIDS?

- | | | | |
|---|------------|-----------|--------------|
| 1. Punishment by others or God for his immoral behavior | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 2. One of his sexual contacts gave it to him | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 3. Having too much casual sex | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 4. Left his children | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |

B. Maria recently suffered a heart attack. She was advised by her doctor to change her eating and activity habits or face the risk of another life-threatening heart attack. During the period that followed, Maria dramatically changes her eating and activity habits. She also began going to church and praying extensively. After a recent checkup, Maria is in the best shape of her life.

What are some of the reasons for Maria's amazing recovery?

- | | | | |
|--|------------|-----------|--------------|
| 1. Changed her eating and activity habits | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 2. She became a better person | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 3. God was testing her faith | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 4. Her doctor prescribed the correct changes | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |

E. Juanita is a 50-year-old lady who is well liked by everyone and has never been seriously ill. During her life, she has been very compliant with her doctor and has been a model citizen.

What might have been some of the reasons for Juanita's good health?

- | | | | |
|--|------------|-----------|--------------|
| 1. Deserved it for being good to the community | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 2. God was "looking out" for her | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 3. She happened to live in a healthy environment | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 4. Took good care of herself | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |

F. Francisco left his wife and two younger daughters a year and a half ago. He does not provide support for them and is currently living off another woman's earnings. During this time, he gained a great deal of weight. After a recent emergency room visit, he was diagnosed with diabetes.

What might have been some of the reasons for Francisco's diabetic condition?

- | | | | |
|--|------------|-----------|--------------|
| 1. He left his family | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 2. He did not control his diet | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 3. Punishment by God | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |
| 4. The other woman fed him too much food | <i>Yes</i> | <i>No</i> | <i>Maybe</i> |

Appendix J
Spanish Consent Form
COLORADO STATE UNIVERSITY
INFORMACION PARA PARTICIPAR EN COMPLETAR UNA ENCUESTA

TITULO DEL PROYECTO: Un Instrumento para Medir las Creencias de Salud de Mujeres Latinas acerca del Cancer del Seno y su Deteccion

NOMBRE DEL INVESTIGADOR PRINCIPAL: Evelinn A. Borrayo, Ph.D.

NOMBRE DE LA PERSONA A CONTACTAR Y TELEFONO PARA PREGUNTAS/PROBLEMAS:
Evelinn A. Borrayo, Ph.D., (970) 491-7324

PATROCINADOR DEL PROYECTO: National Cancer Institute

PROPOSITO DEL PROYECTO: El principal objetivo de este proyecto es crear una encuesta (La Escala de Deteccion del Cancer del Seno para Latinas) para medir las creencias de salud tradicionales que pueden influir en la decision de las Latinas de involucrarse en procedimientos de deteccion del cancer del seno, tales como la mamografia, el auto-examen del seno, y el examen clinico del seno. Se le va a pedir que complete una encuesta que le hara entre 84 y 90 preguntas sobre sus creencias acerca del cancer del seno y los procedimientos de deteccion del cancer del seno. Nuestro meta es reducir la encuesta a 28 preguntas que seran mas faciles de contestar a otras mujeres como usted.

PROCEDIMIENTOS/METODOS A USAR: La encuesta de 84-90 preguntas le tomara en contestar aproximadamente de 60 a 90 minutos. Si por cualquier razon, tal como tener problemas con su vision, usted no puede leer la encuesta, por favor hagase saber a los investigadores y ellos la van a leer por usted y la van a completar como usted les diga. Por favor no escriba su nombre en la encuesta para que nadie pueda relacionar su nombre con sus respuestas. Nosotros vamos a tomar precauciones en la manera en que guardaremos su encuesta para que podamos mantener sus respuestas estrictamente confidenciales. Para agradecerle su tiempo y su cooperacion, se le dara un pequeño regalo por el valor de \$25.00 o \$25.00 dolares en efectivo despues que complete la encuesta.

RIESGOS INHERENTES EN LOS PROCEDIMIENTOS: No se le pedira que escriba sobre sus experiencias personales. Puede decirle a la entrevistadora en cualquier momento que no quiere hablar mas sobre el tema. Tambien puede dejar el grupo sin ningun costo para usted. Aun asi recibira su regalo por el valor de \$25.00 o los \$25.00 dolares en efectivo. Por eso, no hay riesgo alguno para usted. Si el hablar del cancer del seno le hiciera sentirse incomoda, podemos arreglar para que hable con una consejera sin ningun costo. Tambien podemos ayudarle a que tenga acceso a otros recursos. No es posible identificar todos los riesgos potencial en estudios de investigación, pero las investigadora(s) han sido cautelosas en minimizar cualquier riesgo identificado y potencial, sin identificar.

BENEFICIOS: Sus respuestas nos ayudaran a crear una encuesta culturalmente apropiada para preguntarle a las Latinas acerca de sus creencias sobre el cancer del seno. Ademas, la informacion nos puede ayudar a aprender mas sobre como estas creencias influyen o no en que las Latinas decidan participar en procedimientos de deteccion del cancer. Su participacion puede ayudar tambien a desarrollar intervenciones del cancer del seno que se puedan aplicar con otras Latinas como usted. Por ejemplo, esta informacion va a ayudar a profesionales de salud a crear programas para motivar a las Latinas a participar regularmente en las mamografias. Esto es importante porque de todos los tipos de cancer, el cancer del seno es el principal causante de muertes entre Latinas. Por todas estas razones, su ayuda en obtener esta informacion es muy importante y apreciada.

Pagina 1 de 2

Iniciales de la participante _____ Fecha _____

CONFIDENCIALIDAD: Como hemos explicado, no pondremos su nombre en la encuesta. Todas sus respuestas serán mantenidas sin usar su nombre y serán guardadas en estricta confidencialidad. Las entrevistadoras serán las únicas personas que sabrán el nombre de cada participante en el estudio, y ellas no usarán nombres cuando reporte los resultados de el estudio.

RESPONSABILIDAD: El Acta Governamental de Inmunitades de Colorado determina y limita a la Universidad del Estado de Colorado cualquier responsabilidad por cualquier daño que suceda por este estudio. Reclamos en contra de la Universidad deben de someterse dentro de 180 días desde el daño. Preguntas acerca de los derechos de los participantes de este estudio deben de dirigirse a Celia S. Walker al (970) 491-1563.

PARTICIPACION: Su participación en este estudio es voluntaria. Puede retirar su consentimiento y parar su participación en cualquier momento. No perderá ninguno de los beneficios ofrecidos si usted se retira. También puede reusar a contestar cualquier pregunta. Si la entrevista le causa cualquier preocupación y usted quisiera hablar con una consejera, podemos ayudarla a encontrar una consejera. Su firma indica que usted ha leído esta información y está dispuesta a firmar esta forma de consentimiento. Su firma también indica que ha recibido, en la fecha que se firmó, una copia de esta forma conteniendo 2 páginas.

Nombre de la Participante (en letra de molde)

Firma de la Participante

Fecha

Firma de la Testigo (personal del estudio)

Fecha

Página 1 de 2

Iniciales de la participante _____ Fecha _____

Appendix K

Instructions for writing the items on the Latina Breast Cancer Scale (LBCS)

Purpose of the Questionnaire: Develop an instrument to measure traditional health beliefs that influence Latinas decision to engage in breast cancer screening procedures.

Item Writing

- Number of Items:
 - It is important to write more items than what we really want to include in the final version. Ideally, we need to write 30-35 items for each construct (e.g., Feeling Healthy, Feeling Indecent, Feeling Threatened).

- Wording Clarity:
 - Item should be clear to the point that its meaning is comprehended by all respondents in the same fashion. Write items at a 6th grade reading level or below. Avoid long and *sophisticated* words and use short and simple sentences.
 - Avoid using jargon or trendy words because they can be interpreted differently.
 - Avoid slang because not everybody keeps up with the newest expressions.
 - Avoid abbreviations unless you are certain that they are commonly understood.
 - Avoid double-barrel statements that may address two different issues (content areas) in one statement.

- Wording Redundancy:
 - Vary the choice of words so that the content domain of the construct is being tapped differently.

- Positively and Negatively Worded Items:
 - Write both positively and negatively worded items. Find a balance between the two to “keep the respondent honest”. (e.g., should or should not)

- Order of Items:
 - Make sure question #1 doesn’t tip off question #2. Also make sure that the answer to #2 is not dependent on knowing the answer to question #1.

- Tone of Questions:
 - Items should be sensitive to the feelings and values of Latina women. Otherwise, they are likely to respond with strong emotions and defensiveness.

Appendix L

Outline of the 3 constructs and each of their dimensions

Feeling Healthy

A. Breast Cancer Causes

- 1. Physical Predetermination:** belief that “cancer” is in our body just waiting to have something trigger it, or that those with a family history of cancer (heredity) would develop cancer.
- 2. Detrimental external sources:** belief that exposure to external and harmful things causes cancer (i.e., caffeine, breast trauma, hormone pills).
- 3. Breast Feeding:** belief that feeding breast milk to a baby is a cause of or a prevention measure against breast cancer.
- 4. Divine Predestination:** Belief that a supernatural force destines some people to develop cancer.

B. Nature of Breast Cancer

- 1. Symptomatic illness:** belief that one must feel a symptom (i.e., pain, lump) in order to be ill.
- 2. Fatal illness:** belief that breast cancer is fatal refers to inevitable death.
- 3. Shameful illness:** idea that breast cancer screening brings shame and dishonor to oneself and family.

Feeling Indecent

A. Propriety of Female Behavior

- 1. Female modesty:** belief that it is indecent for a female to touch or see her body, as well as for others to touch her body.
- 2. Female commonality:** a special bond women feel with another woman because they feel female share the same body and the same common experience.

B. Propriety of Health Care Providers' behavior

1. **Male Physician Distrust:** many women distrust male health care providers because according to traditional culture, males are not supposed to see or touch female genitals.

2. **Physician trust (“confianza”):** refers to feelings of trust that includes feeling reassurance and familiarity towards another person.

Feeling Threatened

A. Threats Associated with a Breast Cancer Diagnosis

1. **Just World Belief:** belief that people get from life what they deserve based on their actions.

2. **Denial:** a psychological mechanism to maintain a sense of well being and avoid “feeling threatened.”

B. Threats Associated With Breast Cancer Treatment

1. **Loss of feminine identity:** certain female physical traits (e.g., breast, hair) are associated with a woman's feminine identity and sexuality

2. **Relationship with partner or husband:** Concerns about losing a partner's love or gaining partner's rejection because the partner would blame the woman for having her breast removed may keep women from BC screening.

Appendix M

LBCS items

1. You will get breast cancer if men that are not your partner touch your breasts.
2. It is disrespectful to my partner to show my body to a male doctor.
3. I think that it is not proper to touch your breast to check for cancer lumps.
4. I probably will get breast cancer because my mother had it.
5. Cancer is God's way of punishing those who do bad things.
6. Women feel more comfortable having their breasts examined by a female doctor.
7. I don't like my breasts touched when I'm given a medical exam.
8. My family would be ashamed of me if I got breast cancer.
9. Sex without being married could be punished with a bad illness like breast cancer.
10. I feel that doctors sometimes touch my breasts for too long during a check up.
11. If I felt a lump, I would doubt going to see a doctor because I have to show my breast.
12. A woman should be worried if she feels a lump in her breast.
13. If no women in my family have had breast cancer, I do not need to do a breast exam.
14. I have a doctor that I trust with my health worries.
15. Finding breast cancer would be one of the worst things that could happen to me.
16. It is okay for a female doctor to examine my breasts because she is also a woman.
17. A good mother does not deserve to get breast cancer.
18. I should worry about breast cancer only if I have pain in my breast.
19. Caring women do not need to worry about getting breast cancer.
20. I don't worry about breast cancer because no one in my family has had it.
21. Other women understand your health problems better than men.
22. If you feel a lump, then you should get checked for breast cancer.
23. I don't care to have my breasts checked by a male doctor
24. Breast cancer can be a punishment from God.
25. If I got breast cancer my husband would leave me
26. I don't worry about getting breast cancer because God won't let me get that illness.
27. If I had breast cancer, I would be embarrassed to tell my friends.
28. I get discouraged when doctors don't understand my culture
29. If I have breast cancer my husband may leave our family.
30. Drinking a lot of coffee causes breast cancer.
31. A female doctor understands my body.
32. A doctor could tell me that I have a lump in my breast just to scare me.
33. If you breastfed your baby will get breast cancer.
34. It is not okay for a male doctor to examine a woman's breasts.
35. If I got breast cancer, I do not want my family to know
36. I should get checked for breast cancer even though my mother never had breast cancer.
37. Eating greasy food can cause lumps in my breasts.
38. I go to a female doctor because male doctors are perverts.
39. I would feel shame if my friends knew that I had breast cancer.
40. Women with breast cancer lose their hair.
41. It is up to God if a woman gets breast cancer.
42. I prefer to get a mammogram from a female because they are careful with my breasts,
43. I don't think that it is wrong to undress in front of other females.
44. A doctor could know what is wrong with you without needing to touch your breast during a physical exam.
45. Women should only trust female doctors.
46. I don't care if I am examined by a male doctor.
47. I prefer to not know if I have breast cancer.
48. I don't need to have the doctor check my breast if I don't have any cancer symptoms.
49. My husband will leave if I get breast cancer.
50. It is not proper to let anyone but your husband or your partner see your breasts.
51. I would not want my family to know if I had a breast cancer exam.

52. Only older women should worry about getting breast cancer.
53. I wouldn't feel like a woman if I only had one breast.
54. I don't think it is proper to be examined by a male doctor.
55. Breast feeding incorrectly may cause breast cancer later.
56. If I got breast cancer, I wouldn't like to lose my hair during its treatment.
57. I think it is more appropriate to go see a female than a male doctor.
58. Female doctors understand women better than male doctors,
59. Women who have children without getting married can be punished later with breast cancer.
60. My husband will still love me if I had breast cancer.
61. I am sure to die if I get breast cancer.
62. I feel comfortable talking with the doctor about my breasts' health.
63. A woman should have a doctor check her breast only if she has felt some pain.
64. I think it is more proper to be examined by a female doctor.
65. If I had breast cancer I would prefer not to tell my husband.
66. Breast cancer is a test of faith from God.
67. Female doctors are more careful than male doctors when examining women.
68. A good woman should not get breast cancer.
69. I would wait to feel some pain before going to go have my breasts checked.
70. It is easier to talk about breast cancer with a female doctor than a male doctor.
71. I wouldn't want to lose my breast due to breast cancer.
72. If a woman has breast cancer she could lose her husband.
73. I don't need to go to the doctor when I feel healthy, even if it is only for a simple check up.
74. It bothers me to be alone with a male doctor.
75. I do not worry because women in my family do not get breast cancer.
76. My partner would not care if I only had one breast.
77. I won't get breast cancer because I am a good person.
78. Male doctors should only be allowed to examine other men.
79. Women understand a female doctor better than a male doctor.
80. I go to the doctor only when I feel sick.
81. It is better for a woman not to find out if she is ill.
82. I feel comfortable talking to my friends about illnesses like breast cancer.
83. I won't get breast cancer because my mother did not get it.
84. God is not that unfair that he would let me die if I got breast cancer.
85. I should get a regular breast exam if there are women with breast cancer in my family.
86. I feel uncomfortable going to see a male doctor.
87. It is better to see a female doctor for a breast cancer check.
88. Women who are close to their faith do not get breast cancer.
89. Women's breasts is what is most attractive to men.
90. Women who are good and honest won't get breast cancer.
91. Breast cancer exams should only be done by female doctors.
92. Women who eat a lot of processed foods will get breast cancer.
93. It is better for a woman not to know if she has breast cancer.
94. Breastfeeding milk that is left in the breast later can cause breast cancer.
95. Female doctors understand women's bodies better because they are female.
96. When you exercise you can hurt your breast and might get breast cancer.
97. Drinking alcoholic beverages might give me breast cancer.
98. My husband would be the first to know if I had breast cancer.
99. Too much caffeine causes breast cancer.
100. If I pray like I should, I will not get breast cancer.
101. If a friend came with me, I would go get a clinical breast exam more often.
102. Women who do bad deeds get breast cancer.
103. If there are no women in your family with breast cancer there is no reason to see a doctor.
104. I feel embarrassed when I am touched during a clinical breast exam.
105. It would be unfair to get breast cancer because I help sustain my family.
106. God people ought not to get breast cancer.
107. My husband will stop loving me if I get breast cancer.

108. Getting a mammogram is difficult because male doctors like looking at women's bodies.
109. Only God decides if a woman with breast cancer will get better.
110. If a woman has breast cancer there is nothing she can do to get better.
111. It is better not to know how I'm going to die than I rather not know if I have breast cancer.
112. I trust a Spanish-speaking doctor more.
113. For a breast cancer check up, I prefer a female doctor instead of a male doctor.
114. Women with breast cancer must have their breasts removed.
115. I wait until I feel sick to see a doctor.
116. I would feel that I am not a complete woman if I lose my breasts to cancer.
117. I don't trust doctors because I don't understand the difficult words they use.
118. Male doctors have no patience with women.
119. If you get hit in the breast you should go get a clinical exam.
120. I won't get breast cancer because I have good moral values.
121. God can make someone with breast cancer get well.
122. I won't get breast cancer because I breast fed my baby right.
123. I prefer to talk to women than men about my health.
124. I do not have breast cancer exams because I am too embarrassed to show my breasts to a doctor.
125. I prefer if the nurse stays while the doctor is examining me.
126. If I use birth control pills then I will get breast cancer.
127. To be around many chemicals can cause breast cancer to me.
128. I should worry about breast cancer if I have lumps in my breast.
129. Decent women should get dressed quickly after they shower.
130. My friends and family would think that I am attractive if I was bald after breast cancer treatment.
131. Breast feeding for too long may cause breast cancer.
132. I only go to the doctor if I feel sick.
133. God has his reasons for giving me breast cancer.
134. My partner would not stay with me if I were missing a breast.
135. I don't have to get clinical breast exams because God chooses my destiny.
136. I should not look at my naked body even if it is for health reasons.
137. A woman with breast cancer has hopes to get better.
138. Good women do not need to worry about breast cancer.
139. It is good to know how you get breast cancer.
140. Women who have had their breasts fondled before marriage can get breast cancer as a punishment.
141. A male doctor begins to have bad thoughts if he touches my breasts for too long.
142. Women who do not care for their family can get punished with breast cancer.
143. Male physician's stare at your breasts.
144. If I had breast cancer, I would feel better talking to a female doctor.
145. If I do not feel anything bothersome in my breasts, I do not have to be checked for breast cancer.
146. I would prefer not to be told if I had breast cancer.
147. When given a choice, I prefer a female doctor.
148. There is nothing you can do if you get breast cancer.
149. Breast cancer results can be more openly talked about with a female versus a male doctor.
150. Women should not go see a (male) doctor alone.
151. I will not get breast cancer because I do not take birth control.
152. Losing my breast would make me look more like a male than a female.
153. I have no desire to go find out if I have a health problem like breast cancer.
154. Touching yourself, even for a breast exam, is improper.
155. I should get checked for breast cancer if my breast hurts.
156. Only my partner should touch my breasts.
157. Women who get sick with breast cancer bring shame to their family.
158. Birth control pills cause breast cancer.
159. Only God can decide if I get breast cancer.
160. It is okay for a male doctor to examine a woman's breasts.
161. Even if I don't feel sick, I should still go to the doctor regularly.
162. If you feel a lump in your breast you may have breast cancer.
163. God is the only one who can make the sick get well.

164. I would not go to the doctor to get a breast cancer exam unless I felt a lump in my breast.
165. Women that do not have family with breast cancer should still be checked for breast cancer.
166. If I get breast cancer my partner will love me the same way.

Appendix N

Outline for Phase II Analyses: Item Reduction

- Step 1.* General Principal Components Analysis (PCA) for Questionnaire I (QI) (60 items).
- Step 2.* General PCA for Questionnaire II (QII) (80 items).
- Step 3.* Parallel Analysis for QI (60 items).
- Step 4.* Parallel Analysis for QII (80 items).
- Step 5.* PCA with an oblique rotation with 8 factor solution recommended by parallel analysis for QI.
- Step 6.* PCA with a varimax rotation with an 8 factor solution recommended by parallel analysis for QI.
- Step 7.* PCA with an oblique rotation with a 7 factor solution recommended by parallel analysis for QII.
- Step 8.* PCA with a varimax rotation with a 7 factor solution recommended by parallel analysis for QII.
- Step 9.* Reliability Analyses for items by construct and by dimension for QI.
- Step 10.* Reliability Analyses for items by construct and by dimension for QII.
- Step 11.* Reran Parallel Analysis with deleted items (from reliability analyses) for QI.
- Step 12.* Reran Parallel Analysis with deleted items” (from reliability analyses) for QII.
- Step 13.* PCA with an oblique rotation for QI with 6 factor solution recommended by parallel analysis.
- Step 14.* PCA with an oblique rotation for QII with 6 factor solution recommended by parallel analysis.
- Step 15.* Reliabilities conducted based on oblique factor analysis for QI with the 6 factor solution recommended by parallel analysis.
- Step 16.* Reliabilities conducted based on oblique factor analysis for QII with the 6 factor solution recommended by parallel analysis.
-

Appendix O
Spanish Questionnaire Packet

Colorado State University: Encuesta sobre la Salud de la Mujer Latina

La siguiente información es totalmente confidencial. Por favor responda a todas las preguntas.

Sección I

1. ¿Cuántos años tiene? _____
2. ¿En que país nació? _____
3. ¿Cuánto tiempo ha vivido en los Estados Unidos? _____ Años _____ Toda mi vida
4. ¿Cuál es su estado civil actual? (Circule **una** respuesta).
 Soltera (nunca casada) Casada Divorciada Separada Co-habitante (vive con pareja)
 Viuda
5. ¿Donde cursó usted la mayor parte de su educación? Latino América _____ o Estados Unidos _____
6. ¿Está usted actualmente trabajando? Sí No ¿Está usted retirada? Sí No
7. ¿Cuál es/fue su ocupación? _____
8. ¿Tiene usted: Medicare? _____ Medicaid? _____ Aseguranza privada? _____ No tiene? _____
9. ¿Cuántas personas viven en su casa? _____
10. Circule una cantidad que aproxime el ingreso total por mes de su familia:
 Nada Menos de \$1,000 \$1,001 - \$2,000 \$2,001 - \$3,000 \$3,001- \$4,000
 Más de \$4,000
11. Por favor ponga una 'X' en el cuadro que mejor describa su nivel más alto de educación:

Grado	Primaria						Secundaria						Técnico/Vocacional o Universidad				Post-grado	
	0	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5+
Ponga una 'X'																		

Sección II (Breast Cancer Screening)

1. ¿Ha sido usted alguna vez diagnosticada con algún tipo de cáncer? Sí No
 Si respondió Sí, ¿qué tipo(s) de cáncer? _____
2. ¿Ha sido alguna parienta suya diagnosticada con cáncer del seno? Sí No
 Si respondió Sí, ¿qué parentesco tiene con usted? _____

3. ¿Le ha enseñado el doctor o una enfermera cómo examinarse sus senos? Sí No
4. ¿Se examinó usted los senos el mes pasado? Sí No
5. ¿Cuántas veces se examinó usted los senos el año pasado? 0 1-2 3-5 6-9 10-12
6. ¿Le ha recomendado un doctor hacerse un mamograma? Sí No
7. ¿Cuándo fué su último mamograma?
- | | | | | | |
|----------------|------------|-------------|-------------|---------------|------------------|
| Menos de 1 año | Hace 1 año | Hace 2 años | Hace 3 años | Más de 3 años | Nunca obtuve uno |
|----------------|------------|-------------|-------------|---------------|------------------|
8. Pienso obtener un mamograma en . . .
- | | | | |
|---------------|-------------------|------------------|--------------|
| 1 a 4 semanas | Menos de 12 meses | Entre 1 o 2 años | 3 o mas anos |
|---------------|-------------------|------------------|--------------|
9. ¿Cuándo fue su último Papanicolau?
- | | | | | | |
|----------------|------------|-------------|-------------|---------------|------------------|
| Menos de 1 año | Hace 1 año | Hace 2 años | Hace 3 años | Más de 3 años | Nunca obtuve uno |
|----------------|------------|-------------|-------------|---------------|------------------|

Sección III (Short ARSMA; General Acculturation Index)

Circule una respuesta por pregunta.

1. Usted habla---->

Sólo español	Español mejor inglés	que	Español e inglés igualmente bien	Inglés mejor que español	que	Sólo inglés
--------------	----------------------	-----	----------------------------------	--------------------------	-----	-------------

2. Usted lee---->

Sólo español	Español mejor inglés	que	Español e inglés igualmente bien	Inglés mejor que español	que	Sólo inglés
--------------	----------------------	-----	----------------------------------	--------------------------	-----	-------------

3. Pasó su edad temprana [niñez y adolescencia] en--->

Sólo en Latino América	La mayor parte en Latino América	Igualmente en Latino América y en USA	Principalmente en USA	Sólo en USA
------------------------	----------------------------------	---------------------------------------	-----------------------	-------------

4. Actualmente su círculo de amigos es ---->

Casi todos son Hispanos/Latinos	La mayoría son Hispanos/Latinos	Igualmente Hispanos y anglos de USA	La mayoría son anglos de USA	Casi todos anglo USA
---------------------------------	---------------------------------	-------------------------------------	------------------------------	----------------------

5. Tener origen Hispano o Latino hace que usted se sienta ---->

Muy orgullosa	Orgullosa	Algo orgullosa	Poco orgullosa	Nada orgullo
---------------	-----------	----------------	----------------	--------------

Sección IV (Latina Breast Cancer Screening)

Instrucciones: Responda a todas las preguntas.

Circule **una** respuesta por pregunta:

- | | | | |
|---|----|----|---------|
| 1. En mi familia estarían avergonzados de mí si me diera cáncer del seno..... | Sí | No | Tal vez |
| 2. Una mujer debe preocuparse del cáncer solo si siente una bolita en su seno.... | Sí | No | Tal vez |
| 3. Si diste pecho a tu bebé, te puede dar cáncer del seno..... | Sí | No | Tal vez |
| 4. Si me diera cáncer del seno mi esposo me dejaría..... | Sí | No | Tal vez |
| 5. Si tuviera cáncer del seno yo me sentiría avergonzada de decirles a mis amigas. | Sí | No | Tal vez |
| 6. Si yo tuviera cáncer del seno mi esposo podría dejar a nuestra familia..... | Sí | No | Tal vez |
| 7. El tomar mucho café causa cáncer del seno. | Sí | No | Tal vez |
| 8. Yo debo preocuparme del cáncer del seno solo si tengo algún dolor en mis senos | Sí | No | Tal vez |
| 9. Es cosa de Dios si a una mujer le da cáncer del seno..... | Sí | No | Tal vez |
| 10. Dar pecho incorrectamente puede después causar cáncer del seno..... | Sí | No | Tal vez |
| 11. Me molesta estar a solas con un doctor que es hombre..... | Sí | No | Tal vez |
| 12. Las doctoras son más cuidadosas que los doctores cuando examinan los senos... | Sí | No | Tal vez |
| 13. Si una mujer tiene cáncer del seno, ella podría perder a su esposo..... | Sí | No | Tal vez |
| 14. Las doctoras entienden a las mujeres mejor que los doctores..... | Sí | No | Tal vez |
| 15. Me siento incomoda viendo a un doctor que es hombre..... | Sí | No | Tal vez |
| 16. Es mejor ir a una doctora si es para hacerse un chequeo de cáncer del seno..... | Sí | No | Tal vez |
| 17. Las mujeres que comen mucha comida procesada les puede dar cáncer del seno | Sí | No | Tal vez |
| 18. La leche materna que se deja en los pechos luego puede causar cáncer del seno. | Sí | No | Tal vez |

19. Las doctoras entienden el cuerpo de las mujeres mejor porque ellas también son mujeres.....	Sí	No	Tal vez
20. Tomar bebidas alcohólicas me puede causar cáncer del seno.....	Sí	No	Tal vez
21. Me da vergüenza cuando me tocan para hacerme un examen clínico del seno ...	Sí	No	Tal vez
22. Mi pareja me dejaría de amar si me diera cáncer del seno.....	Sí	No	Tal vez
23. Solo Dios decide si una mujer con cáncer del seno se mejora.....	Sí	No	Tal vez
24. Lastimarse los senos causa cáncer del seno.	Sí	No	Tal vez
25. Me da vergüenza enseñar mis senos cuando me hacen un examen del seno.....	Sí	No	Tal vez
26. Dios tendría sus razones si me diera cáncer del seno.....	Sí	No	Tal vez
27. Mi pareja se quedaría conmigo aun si me faltara un seno.....	Sí	No	Tal vez
28. Me sentiría mas cómoda hablando con una doctora sobre el cáncer del seno.....	Sí	No	Tal vez
29. Perder un seno haría que me vea como un hombre.....	Sí	No	Tal vez
30. Tocarse uno mismo aunque sea para examinarse el seno es incorrecto.....	Sí	No	Tal vez
31. Dios es el único que puede sanar a los enfermos de cáncer.....	Sí	No	Tal vez
32. Las mujeres con cáncer del seno traen vergüenza a su familia.....	Sí	No	Tal vez
33. Las pastillas anticonceptivas causan cáncer del seno.....	Sí	No	Tal vez
34. Solamente Dios puede decidir si me da cáncer del seno.....	Sí	No	Tal vez
35. Ni aun un doctor debe tocarme los senos, solamente mi pareja puede hacerlo....	Sí	No	Tal vez
36. Me da vergüenza hablar sobre enfermedades como el cáncer del seno.....	Sí	No	Tal vez

Sección V (Breast Cancer Knowledge Test)

Instrucciones: Responda a todas las preguntas escogiendo solo una respuesta por pregunta.

1. Si ya no tiene su menstruación, que tan seguido debe examinarse usted misma los senos:
 a) cada semana b) una vez al mes c) cada tres meses d) no sé
2. La mayoría de quistes o nudos en el seno son encontrados por:
 a) las mujeres b) el doctor(a) c) una mamografía d) no sé
3. A que edad debe una mujer joven empezar a hacerse el auto examen de los senos, a los:
 a) 20 años b) 30 años c) 35 años d) no sé
4. Examinarse los senos usted misma regularmente es una de las pruebas más efectivas para la detección de cáncer del seno..... Sí No
5. Las mamografías pueden detectar los quistes que no se pueden sentir..... Sí No
6. Al hacerse mamografías regularmente, no tiene que hacerse el auto examen de los senos o exámenes físicos..... Sí No
7. La mamografía es recomendada cada año para mujeres sobre 50 años de edad..... Sí No
8. Usar la palma de su mano es la manera más efectiva de detectar un quiste en el seno..... Sí No
9. Los auto-exámenes del seno deben de hacerse cuando tiene su menstruación porque es cuando los quistes o nudos son más fáciles de detectar..... Sí No
10. Una parte importante del auto-examen de los senos es mirarse los senos en el espejo..... Sí No
11. Durante el auto-examen del seno debe de examinarse debajo del brazo para tocar si hay algún quiste..... Sí No
12. Para que un examen del seno sea bueno es necesario apretar el pezón..... Sí No

Sección VI (Breast Cancer Knowledge Test)

Círcule **una** respuesta por pregunta:

- | | | | |
|--|----|----|---------|
| 1. Un golpe duro al seno puede causar cáncer del seno mas adelante en su vida... | Sí | No | Tal vez |
| 2. La irritación constante de un sostén apretado puede causar cáncer del seno..... | Sí | No | Tal vez |
| 3. A una de cada ocho mujeres en los Estados Unidos le va a dar cáncer del seno alguna vez en su vida..... | Sí | No | Tal vez |
| 4. En algunas mujeres, el sobrepeso aumenta su riesgo de tener cáncer del seno... | Sí | No | Tal vez |
| 5. Es mas probable que si tiene su primer hijo antes de los 30 años le de cáncer del seno, que si lo tiene después de los 30 años..... | Sí | No | Tal vez |
| 6. A mujeres que no tienen ningún riesgo de cáncer del seno raramente les da cáncer del seno..... | Sí | No | Tal vez |
| 7. Algunos quistes en el seno que no son cancerosos aumentan el riesgo de cáncer del seno..... | Sí | No | Tal vez |
| 8. El cáncer del seno es más común entre mujeres de 65 años que entre mujeres de 40 años..... | Sí | No | Tal vez |
| 9. El cáncer que ocurre más seguido entre las mujeres es el cáncer del seno..... | Sí | No | Tal vez |
| 10. A mujeres de más de 70 años de edad rara vez les da cáncer del seno..... | Sí | No | Tal vez |
| 11. La mayoría de quistes en el seno son cancerosos..... | Sí | No | Tal vez |
| 12. El cáncer del seno ya puede ser tratado con éxito sin tener que quitar el seno... | Sí | No | Tal vez |
| 13. Si un quiste en el seno llega a doler, es demasiado tarde para poder tratarlo con éxito..... | Sí | No | Tal vez |
| 14. El cáncer del seno es algunas veces tratado con éxito al quitar un quiste y con terapia de radiación..... | Sí | No | Tal vez |
| 15. Es menos probable curarle el cáncer del seno cuando alguien en su familia también lo ha tenido..... | Sí | No | Tal vez |
| 16. Si una mujer se puede sentir un quiste canceroso en el seno, es demasiado tarde para poder tratarlo con éxito..... | Sí | No | Tal vez |
| 17. Aunque el cáncer del seno sea encontrado muy temprano, las probabilidades de una cura son mucho mejores si se quita todo el seno..... | Sí | No | Tal vez |
| 18. Aunque sea detectado y tratado a tiempo, una mujer con cáncer del seno probablemente no vivirá todo el tiempo de vida que debería..... | Sí | No | Tal vez |

Sección VII

Circule una respuesta por pregunta:

- | | | | |
|--|----|----|---------|
| 1. Los doctores tienen en mente los mejores intereses para la gente de mi raza.... | Sí | No | Tal vez |
| 2. La gente de mi raza no debería de confiar en doctores porque esto puede ser usado en su contra..... | Sí | No | Tal vez |
| 3. La gente de mi raza debería de sospechar de la información que viene de los doctores..... | Sí | No | Tal vez |
| 4. La gente de mi raza es tratada igual que la gente de otras razas por los doctores..... | Sí | No | Tal vez |
| 5. He sido tratada de manera mala o injusta por los doctores debido a mi raza..... | Sí | No | Tal vez |

Sección VIII (Fatalism Inventory)

Yo creo que...

- | | | | |
|--|----|----|---------|
| 1. Si a alguien le da cáncer del seno, le va a dar no importa lo que haga..... | Sí | No | Tal vez |
| 2. Si alguien esta destinada a tener cáncer del seno, le dará cáncer del seno..... | Sí | No | Tal vez |
| 3. Si a alguien le da cáncer del seno, eso es parte del plan de Dios..... | Sí | No | Tal vez |
| 4. Si alguien tiene cáncer del seno ya es demasiado tarde para hacer algo al respecto..... | Sí | No | Tal vez |
| 5. Si a alguien le da cáncer del seno su hora de morir esta cerca..... | Sí | No | Tal vez |
| 6. Si a alguien le da cáncer del seno, estaba destinada a morir de esa manera..... | Sí | No | Tal vez |
| 7. Si a alguien le da cáncer del seno, distintos tratamientos no cambiaran nada... | Sí | No | Tal vez |
| 8. El cáncer del seno mata a la mayoría de la gente a quien le da..... | Sí | No | Tal vez |

Sección IX (Cultural Health Attributions Questionnaire)

Instrucciones: Lea cada historia y después conteste las 4 preguntas sobre cada historia.

A. José tiene 42 años y mantiene una vida sexual muy activa. Ha tenido tres hijos fuera de su matrimonio y continúa rechazando el uso de condones. Recientemente, José ha descubierto que tiene SIDA.

¿Porque razones a José le dio SIDA?

- | | | | |
|---|----|----|---|
| 1. Porque Dios u otros le castigaron por su conducta inmoral..... | Sí | No | T |
| 2. Porque una de las personas con las que tuvo relaciones sexuales se lo contagio.. | Sí | No | T |
| 3. Porque ha tenido muchas relaciones sexuales fuera del matrimonio..... | Sí | No | T |
| 4. Porque ha abandonado a sus hijos..... | Sí | No | T |

B. Hace poco Maria sufrió un ataque al corazón. Su médico le aconsejo cambiar de dieta y hacer ejercicio para evitar otro ataque. Después de un tiempo, Maria cambio su dieta y se volvió mas activa. También empezó a ir a la iglesia y a rezar muchísimo. Después de un chequeo, el medico noto que Maria estaba mejor que nunca.

¿Porque razones Maria se mejoró?

- | | | | |
|--|----|----|-----|
| 1. Cambio su dieta y empezó a hacer ejercicio..... | Sí | No | Tal |
| 2. Se convirtió en una mejor persona..... | Sí | No | Tal |
| 3. Fue un premio de Dios..... | Sí | No | Tal |
| 4. Su medico le receto los cambios correctos..... | Sí | No | Tal |

C. Juanita tiene 50 años. Nunca ha estado gravemente enferma y todos piensan que es muy buena persona. Durante su vida ha seguido los consejos de su medico y también ha sido una buena ciudadana en su comunidad.

¿Porque razones Juanita tiene buena salud?

- | | | | |
|---|----|----|-----|
| 1. Lo merece por ser buena con la comunidad..... | Sí | No | Tal |
| 2. Dios la ha estado cuidando..... | Sí | No | Tal |
| 3. Por casualidad, vive en un ambiente saludable..... | Sí | No | Tal |
| 4. Cuida muy bien de su salud..... | Sí | No | Tal |

D. Francisco dejo a su esposa y dos niñas pequeñas sin ningún apoyo. Ahora, el esta viviendo con otra mujer y ha aumentado mucho de peso. Después de un tiempo, fue diagnosticado con diabetes.

¿Porque razones le dio a Francisco diabetes?

- | | | | |
|---|----|----|-----|
| 1. Abandonó a su familia..... | Sí | No | Tal |
| 2. No pudo controlar su dieta..... | Sí | No | Tal |
| 3. Fue castigo de Dios..... | Sí | No | Tal |
| 4. La otra mujer le dio mucho de comer..... | Sí | No | Tal |

Table 1

Phase II: Sample characteristics

	N	M	SD
Age (years)	288	50.95	9.3
Length of time Living in the U.S (years)	285	19 (median = 13)	17.9
Number of people living in household	286	4.0	1.88
Education (years)	285	8.5	4.6

Table 2

Phase II: Sample Characteristics

	N	Percent
Birth Country/Region		
Mexico	215	75%
South America	8	3%
Central America	16	6%
USA	42	15%
Other		
Marital Status		
Single	24	9%
Married	151	53%
Divorced	31	11%
Separated	35	12%
Co-habiting	20	7%
Widowed	23	8%
Income		
None	9	3%
Less than \$1,000	109	39%
\$1,001-\$2,000	103	37%
\$2,001-\$3,000	30	11%
\$3,001-\$ 4,000	11	4%
Over \$4,000	17	6%
Education Level		
High school (12+)	99	35%
Less than High School	186	65%
Obtained Education		
Latino America	218	80%
USA	53	20%
Employed		
Yes	127	(44%)
No	160	(56%)

Table 3

Phase II: Participants' Medical Coverage

	No	Yes
	Freq. (%)	Freq. (%)
Medicare	254 (91%)	25 (9%)
Medicaid	256 (93%)	20 (7%)
Private Insurance	219 (79.6%)	56 (20%)
No medical coverage	87 (31.6%)	188 (68.4%)

Table 4

PCA with an oblique rotation: Factor pattern loadings of LBCS items

Item	F1	F2	F3	F4	F5	F6	F7	F8
Me molesta estar a solas con un doctor varón.	.764							
Me siento incomoda yendo a ver a un doctor varón.	.753							
Es mejor ir a una doctora si es para hacerse un chequeo de cáncer del seno.	.620							
Las doctoras entienden a las mujeres mejor que los doctores varones.	.612							
Me sentiría más cómoda hablando con una doctora sobre el cáncer del seno.	.575							
Las doctoras son más cuidadosas que los doctores varones cuando examinar.	.542							
Las doctoras entienden el cuerpo de las mujeres mejor porque ellas también son mujeres.	.495							
Me da vergüenza cuando me toca para hacerme un examen clínico del seno.	.494							
Me da vergüenza enseñar mis senos cuando me hacen un examen del seno.	.491							
Las mujeres con cáncer del seno traen vergüenza a su familia.		.651						
Perder un seno haría que me veo como un hombre.		.570						
En mi familia estarían avergonzados de mí si me diera cáncer del seno.		.542						
Una mujer con cáncer del seno tiene esperanzas de sanarse		.483						
Ni aun doctor debe tocarme los senos, solamente mi pareja puede hacerlo.		.419						
Es mejor para una mujer saber si tiene cáncer del seno		.416						
Solamente Dios puede decidir si me da cáncer del seno.			.860					
Dios tendría sus razones si me diera cáncer del seno.			.834					
Es cosa de Dios si a una mujer le da cáncer del seno.			.726					
Solo Dios decide si una mujer con cáncer del seno se mejora.			.657					
Dios es el único que puede sanar a los enfermos de cáncer.			.653					
Lastimarse los senos causa cáncer del seno.								-.655
Tomar bebidas alcohólicas me puede causar cáncer del seno.								-.624
Las mujeres que comen mucha comida procesada les puede dar cáncer del seno.								-.618

Item	F1	F2	F3	F4	F5	F6	F7	F8
Dar pecho incorrectamente puede después causar cáncer del seno.				-613				
El tomar mucho café causa cáncer del seno.				-612				
Las pastillas anticonceptivas causan cáncer del seno.				-593				
La leche materna que se deja en los pechos luego puede causar cáncer del seno.				-528				
A las mujeres que hacen maldades les da cáncer del seno.				-449				
Mi pareja me dejaría de amar si me diera cáncer del seno.					.852			
Si me diera cáncer del seno, mi esposo me dejaría.					.806			
Si yo tuviera cáncer del seno, mi esposo podría dejar a nuestra familia.					.763			
Item46					.663			
Si una mujer tiene cáncer del seno, ella podría perder a su esposo.					.622			
Si tuviera cáncer del seno, yo me sentiría avergonzada de decirles a mis amigas.					.482			
Yo sentiría vergüenza si mis amigas supieran que tengo cáncer del seno.					.417			
Yo esperaría a sentir algún dolor antes de ir a que me examinen los senos.					.409			
Yo debo preocuparme del cáncer del seno solo si tengo algún dolor en mis senos.						.715		
Una mujer debe de preocuparse del cáncer solo si siente una bolita en su seno.						.679		
Si tuviera cáncer del seno, preferiría no decirle a mi esposo.						.575		
No hay nada que se pueda hacer si me diera cáncer del seno.						.417		
Yo debería chequearme los senos a pesar de que mi mama nunca tuvo cáncer del seno								-734
Me preocupo del cáncer del seno aunque nadie en mi familia lo ha tenido								-696
Debería ir a que me examinen de cáncer del seno si tengo algún síntoma								.625
Me sentiría mujer aun cuando tuviera solo un seno								-600
No hay nada que se pueda hacer si me diera cáncer del seno								.429
Estoy segura que me moriría si me diera cáncer del seno								.426
Me da temor saber si tengo un problema de salud como cáncer del seno								.415

Note: N = 288

Table 5

PCA with a Varimax Rotation : Factor pattern loadings of LBCS items

Item	F1	F2	F3	F4	F5	F6	F7	F8
Me molesta estar a solas con un doctor varón.	.702							
Me siento incomoda yendo a ver a un doctor varón.	.690							
Es mejor ir a una doctora si es para hacerse un chequeo de cáncer del seno.	.676							
Las doctoras entienden a las mujeres mejor que los doctores varones.	.652							
Me sentiría más cómoda hablando con una doctora sobre el cáncer del seno.	.638							
Las doctoras son más cuidadosas que los doctores varones cuando examinar.	.606							
Las doctoras entienden el cuerpo de las mujeres mejor porque ellas también son mujeres.	.580							
Me da vergüenza cuando me toca para hacerme un examen clínico del seno.	.503							
Me da vergüenza enseñar mis senos cuando me hacen un examen del seno.	.497							
Lastimarse los senos causa cáncer del seno.		.648						
Dar pecho incorrectamente puede después causar cáncer del seno.		.623						
Tomar bebidas alcohólicas me puede causar cáncer del seno.		.619						
Las mujeres que comen mucha comida procesada les puede dar cáncer del seno.		.594						
El tomar mucho café causa cáncer del seno.		.586						
Las pastillas anticonceptivas causan cáncer del seno.		.576						
La leche materna que se deja en los pechos luego puede causar cáncer del seno.		.558						
A las mujeres que hacen maldades les da cáncer del seno.		.510						
Tener relaciones sexuales sin casarse podría ser castigado con una mala enfermedad como el cáncer del seno.		.428						
Si diste pecho a tu bebe, te puede dar cáncer del seno.		.400						
Mi pareja me dejaría de amar si me diera cáncer del seno.			.820					
Si me diera cáncer del seno, mi esposo me dejaría.			.776					

Item	F1	F2	F3	F4	F5	F6	F7	F8
Si yo tuviera cáncer del seno, mi esposo podría dejar a nuestra familia.			.730					
Mi pareja se quedaría conmigo aun si me faltara un seno			.647					
Si una mujer tiene cáncer del seno, ella podría perder a su esposo.			.613					
Si tuviera cáncer del seno, yo me sentiría avergonzada de decirles a mis amigas.			.506					
Yo sentiría vergüenza si mis amigas supieran que tengo cáncer del seno.			.448					
Yo esperaría a sentir algún dolor antes de ir a que me examinen los senos.			.420					
Solamente Dios puede decidir si me da cáncer del seno.				.828				
Dios tendría sus razones si me diera cáncer del seno.				.805				
Es cosa de Dios si a una mujer le da cáncer del seno.				.708				
Solo Dios decide si una mujer con cáncer del seno se mejora.				.649				
Dios es el único que puede sanar a los enfermos de cancer				.659				
Yo debería chequearme los senos a pesar de que mi mama nunca tuvo cáncer del seno					.737			
Me preocupo del cáncer del seno aunque nadie en mi familia lo ha tenido					.653			
Debería ir a que me examinen de cáncer del seno si tengo algún síntoma.					-.643			
Me sentiría mujer aun cuando tuviera solo un seno					.602			
Las mujeres con cáncer del seno traen vergüenza a su familia.						.662		
Perder un seno haría que me vea como un hombre.						.579		
En mi familia, estarían avergonzados de mí si me diera cáncer del seno.						.571		
Ni aun un doctor debe tocarme los senos, solamente mi pareja puede hacerlo.						.444		
Es mejor para una mujer saber si tiene cáncer del seno						.413		
Yo debo preocuparme del cáncer del seno solo si tengo algún dolor en mis senos							.719	
Una mujer debe de preocuparse del cáncer solo si siente una bolita en su seno							.680	
Si tuviera cáncer del seno preferiría no decirle a mi esposo							.531	
Estoy segura que me moriría si me diera cáncer del seno							.479	
Me da temor saber si tengo un problema de salud como cáncer del seno							.439	
No hay nada que se pueda hacer si me diera cáncer del seno							.407	

Note: N= 288

Table 6

Reliabilities for Question I and Questionnaire II

Construct/dimension	Questionnaire I		Questionnaire II	
	Alpha	Items	Alpha	Items
Feeling Healthy	.79		.79	
Physical Predetermination	-.02	(2, 9, 15, 29)	.11	(2, 9, 15, 29, 69, 80)
Detrimental Sources	.69	(13, 32,36,43,58)	.74	(13, 32, 36, 43, 58, 74)
Breast Feeding	.64	(14, 19, 34)	.70	(14, 19, 34, 77)
Divine Predestination	.85	(17, 40, 45, 59, 60)	.84	(17,40,45,59,60, 67)
Symptomatic illness	.48	(6, 7, 25, 55)	.42	(6, 7, 25, 55, 72, 75)
Fatal illness	.25	(21, 47, 51)	.07	(21, 47, 51, 62)
Shameful illness	.72	(4, 11, 16, 57)	.75	(4, 11, 16, 57,61)
Feeling Indecent	.84		.77	
Female modesty	.58	(38, 44, 54, 56)	.67	(38, 44, 54, 56, 76, 78)
Female commonality	.81	(3, 20, 24, 31, 35, 49)	.80	(3, 20, 24, 31, 35, 49)
Male Physician Distrust	.67	(27, 30, 48)	.34	(27, 30, 48, 71, 79)
Physician trust	.20	(1, 22, 41)	.29	(1, 22, 41, 64, 73)
Feeling Threatened	.65		.74	
Just World Beliefs	.57	(5, 8, 37)	.66	(5, 8, 37, 63, 68, 70)
Denial Items	.004	(28, 33, 50, 53)	.27	(28, 33, 50, 53, 65)
Loss of feminine identity	.31	(18, 42, 52)	.55	(18, 42, 52, 66)
Relationship with partner	.69	(10, 12, 23, 26, 39, 46)	.69	(10, 12, 23, 26, 39, 46)

Note: $N = 288$

Table 7

Final Principal Components Factor Analyses: Factor pattern loadings of LBCS items

Item	F1	F2	F3	F4	F5	F6
43. Lastimarse los senos causa cáncer del seno	.688					
19. Dar pecho incorrectamente puede después causar cáncer del seno	.648					
13. El tomar mucho café causa cáncer del seno	.614					
32. Las mujeres que comen mucha comida procesada les puede dar cáncer del seno	.612					
58. Las pastilla anticonceptivas causan cáncer del seno	.602					
36. Tomar bebidas alcohólicas me puede causar cáncer del seno	.598					
34. La leche materna que se deja en los pechos luego puede causar cáncer del seno	.595					
37. A las mujeres que hacen maldades les da cáncer del seno	.460					
14. Si diste pecho a tu bebe, te puede dar cáncer del seno	.405					
39. Mi pareja me dejaría de amar si me diera cáncer del seno		.872				
10. Si mi diera cáncer del seno, mi esposo me dejaría		.788				
12. Si yo tuviera cáncer del seno, mi esposo podría dejar a nuestra familia		.720				
46. Mi pareja se quedaría conmigo aun si me faltara un seno		.705				
26. Si una mujer tiene cáncer del seno, ella podría perder su esposo		.628				
11. Si tuviera cáncer del seno, yo me sentiría avergonzada de decirles a mis amigas		.471				
25. Yo esperaría a sentir algún dolor antes de ir a Que me examinen		.409				
30. Me siento incomoda viendo a ver a un doctor varón						-.746
27. Me molesta estar a solas con un doctor varón						-.743
31. Es mejor ir a una doctora si es para hacerse un chequeo del cáncer del seno						-.687

Item	F1	F2	F3	F4	F5	F6
20. Las doctoras entienden a las mujeres mejor que los doctores varones			-.665			
49. Me sentiría mas cómoda hablando con una doctora sobre el cáncer del seno			-.664			
24. Las doctoras son mas cuidadosas que los doctores varones cuando examinan los senos			-.594			
35. Las doctoras entienden el cuerpo de las mujeres porque ellas también son mujeres			-.581			
44. Me da vergüenza enseñar mis senos cuando me hacen un examen del seno			-.485			
38. Me da vergüenza cuando me tocan para hacerme un examen clínico del seno			-.466			
59. Solamente Dios puede decidir si me da cáncer del seno				.876		
45. Dios tendría sus razones si me diera cáncer del seno.				.846		
17. Es cosa de Dios si a una mujer le da cáncer del seno				.764		
40. Solo Dios decide si una mujer con cáncer del seno se mejora				.605		
60. Dios es el único que puede sanar a los enfermos de cáncer del seno				.593		
56. Ni aun un doctor debe tocarme los senos, solamente mi pareja puede hacerlo					.617	
57. Las mujeres con cáncer del seno traen vergüenza a su familia					.515	
54. Tocarse uno mismo aunque sea para examinarse el seno es incorrecto					.509	
52. Perder un seno haría que me vea como un hombre.					.503	
55. Debería ir a que me examinen de cáncer del seno si tengo algún síntoma					-.498	
18. Me sentiría mujer aun cuando tuviera solo un seno					.401	
4. En mi familia, estarían avergonzados de mí si me diera cáncer del seno					.401	
6. Una mujer debe de preocuparse del cáncer solo si siente una bolita en su seno						.765
7. Yo debo preocuparme del cáncer del seno solo si tengo algún dolor en mis senos						.753
23. Si tuviera cáncer del seno, preferiría no decirle a mi esposo						.551

Note: $N = 288$

Table 8

Reliabilities for Questionnaire I and Questionnaire II

Construct/dimension	Questionnaire I		Questionnaire II	
	Alpha	Items	Alpha	Items
Factor 1:	.797		.816	
Factor 2	.812	2, 9, 15, 29	.666	2, 9, 15, 29, 69, 80
Factor 3	.855	13, 32, 36, 43, 58	.585	13, 32, 36, 43, 58, 74
Factor 4	.850	14, 19, 34	.852	14, 19, 34, 77
Factor 5	.316	17, 40, 45, 59, 60	.829	17, 40, 45, 59, 60, 67
Factor 6		6, 7, 25, 55	.534	6, 7, 25, 55, 72, 75

Note: *N* = 288

Table 9

Phase III: Sample Characteristics

	N	M	SD
Age (years)	147	50	8.5
Length of time Living in the U.S (years)	147	23 (median = 15)	20
Number of people living in household	146	3.89	1.9
Education (years)	146	9.6	4.5

Table 10

Phase III: Sample Characteristics

	Frequency	%
Birth Country		
Mexico	102	69%
South America	6	4%
Central America	3	2%
USA	35	24%
Other	2	1%
Marital Status		
Single	13	9%
Married	87	59%
Divorced	14	10%
Separated	21	14%
Co-habiting	7	5%
Widowed	5	5%
Income		
None	2	1%
Less than \$1,000	53	37%
\$1,001-\$2,000	49	34%
\$2,001-\$3,000	14	10%
\$3,001-\$ 4,000	11	8%
Over \$4,000	16	11%
Educational level		
High school (12+)	62	42%
Less than High School	84	58%
Obtained Education		
Latino America	102	71%
USA	42	29%
Employed		
Yes	79	(55%)
No	65	(45%)

Table 11

Participants' Medical Coverage

	No	Yes
	Freq. (%)	Freq. (%)
Medicare	133 (91%)	13 (9%)
Medicaid	141 (97%)	5 (3%)
Private Insurance	104 (71%)	42 (29%)
No medical coverage	59 (40%)	87 (60%)

Table 12

Correlations Among the Socio-Demographic Variables and BC screening behaviors

	1	2	3	4	5	6	7	8	9	10	11	1
1. Education	---											
2. Income	.52**	---										
3. U.S. time lived	.33**	.23**	---									
4. Age	-.19*	-.08	.39**	---								
5. Region born	-.35**	-.22**	.84**	-.29**	---							
6. Marital Status	-.03	-.22**	.13	.23**	-.09	---						
7. Insurance Coverage	-.36**	-.48**	-.51**	-.17*	.45**	-.00	---					
8. BSE in last month	.17*	.07	.08	-.03	-.07	-.04	-.04	---				
9. BSEs in past year	.11	.08	-.02	.01	.04	-.09	.11	.52**	---			
10. Plans to obtain a mammogram	.06	.18*	.16	.10	-.16	-.03	-.11	-.07	-.09	---		
11. Last mammogram	-.09	-.16	-.16	-.19*	.03	.11	.18*	-.12	-.06	-.16	---	
12. Last PAP exam	-.05	-.13	.03	.24**	.11	.14	.08	-.25**	-.22**	.05	.37**	---

Note: N = 147

Table 13

Correlations Among the GBMMS items and the LBCS subscales

	1	2	3	4	5	6	7	8	9	10	11
1. GBMMS 1	---										
2. GBMMS 2	-.03	---									
3. GBMMS 3	-.23**	.42**	---								
4. GBMMS 4	.13	.03	.01	---							
5. GBMMS 5	-.05	.18*	.22*	.17*	---						
6. Lbcs_modesty	-.23**	.32**	.35**	.01	.14	---					
7. Lbcs_relationships	.01	.32**	.24**	.11	.30**	.47**	---				
8. Lbcs_detrimantal sources	-.11	-.20	.23**	-.06	-.02	.60**	.42**	---			
9. Lbcs_divine predestination	-.24**	.14	.35**	.06	.06	.53**	.35**	.47**	---		
10. Lbcs_shameful illness	-.10	.51**	.40**	.05	.23**	.49**	.56**	.53**	.42**	---	
11. Lbcs symptomatic illness	-.09	.26*	.35**	-.05	.08	.33**	.15	.32**	.34**	.33**	---

Note: *N* = 147

Table 14

Convergent and Discriminant Validity for the Latina Breast Cancer Screening Scale

	<i>r</i>	<i>p</i>
General Acculturation Index	-.131	.124
Fatalism Inventory	.726	.0001**
Cultural Health Attributions Questionnaire	.547	.0001**
BCKT (Stager)	-.409	.0001**

Note: *N* = 147

Table 15

Intercorrelations Among the Instruments in the Study

	1	2	3	4
1. Acculturation	--			
2. BCKT II gk_c	.063	--		
3. Fatalism	.032	-.347**	--	
4. CHAQ	-.141	-.218**	.474**	--

Note: $N = 147$

** $p < .0001$

Table 16

Logistic Regression for BSE in the past month

<i>Variables (B)</i>	<i>B</i>	<i>S.E</i>	<i>Wald</i>	<i>p</i>	<i>Exp</i>
Step 1 Age	.01	.02	.14	.71	1.01
Region born	-.15	.53	.08	.77	.858
Employment	.13	.40	.11	.75	1.14
Insurance status	.28	.45	.39	.54	1.32
Income	.02	.18	.01	.92	1.01
Education	.09	.06	2.4	.12	1.10
Step 2 LBCS modesty	-.02	.04	.25	.62	.979
Relationships	.05	.10	.21	.65	1.04
Detrimental sources	.10	.07	2.4	.12	1.10
Divine predestination	-.03	.06	.22	.64	.972
Shameful illness	-.05	.09	.29	.59	.953
Symptomatic illness	-.03	.12	.04	.83	.975

Note: *N* = 139

Table 17

Hierarchical regression prediction of frequency of BSEs in the last year

Variables	<i>B</i>	<i>t</i>	<i>p</i>
Step 1			
Age	.03	1.8	.07
Region born	.24	.72	.47
Employment status	.19	.74	.46
Insurance status	.79	2.8	.01*
Income	.20	1.8	.08
Education	.04	1.1	.29
Step 2			
LBCS subscale			
Female modesty	.02	.74	.46
Relationships	.06	.99	.33
Detrimental sources	.04	.88	.38
Divine predestination	-.06	-1.7	.10
Shameful illness	-.03	-.60	.55
Symptomatic illness	-.09	-1.2	.22

Note. ($N = 137$). LBCS = Latina Breast Cancer Screening Scale. *B* and *t* are shown from the last step with all variables entered. $R^2 = .09$ for Step 1; R^2 change = .14 for Step 2.

* $p < .05$

Table 18

Hierarchical regression prediction of last mammogram

Variables		<i>B</i>	<i>t</i>	<i>p</i>
Step 1				
	Age	-.06	-2.6	.01*
	Region born	-.74	-1.6	.11
	Employment status	-.40	-1.2	.25
	Insurance status	.40	1.0	.31
	Income	-.20	-1.3	.19
	Education	.02	.36	.72
Step 2				
	LBCS modesty	.08	2.0	.05*
	Relationships	-.15	-1.8	.08
	Detrimental sources	.02	.43	.67
	Divine predestination	-.04	-.72	.47
	Shameful illness	.05	.62	.54
	Symptomatic illness	.16	1.6	.12

Note. ($N = 138$). LBCS = Latina Breast Cancer Screening Scale. *B* and *t* are shown from the last step with all variables entered. $R^2 = .11$ for Step 1; R^2 change = .18 for Step 2.

* $p < .05$

Table 19

Hierarchical regression prediction for future mammogram

Variables		<i>B</i>	<i>t</i>	<i>p</i>
Step 1	Age	-.00	-.10	.92
	Region born	-.13	-.61	.54
	Employment status	.33	2.1	.04*
	Insurance status	.09	.53	.60
	Income	.18	2.7	.01*
	Education	.00	.14	.89
	Step 2	LBCS		
Modesty		-.03	-1.6	.11
Relationships		.08	2.1	.04*
Detrimental sources		-.05	-2.0	.05*
Divine predestination		.04	1.6	.11
Shameful illness		.02	.66	.51
Symptomatic illness		.07	1.6	.12

Note. ($N = 136$). LBCS = Latina Breast Cancer Screening Scale. *B* and *t* are shown from the last step with all variables entered. $R^2 = .09$ for Step 1; R^2 change = .18 for Step 2.

* $p < .05$

Table 20

Hierarchical regression prediction for last PAP exam

Variables		<i>B</i>	<i>t</i>	<i>p</i>
Step 1	Age	.05	3.2	.002*
	Region born	-.37	-1.1	.26
	Employment status	-.06	-.25	.80
	Insurance status	.35	1.2	.22
	Income	-.13	-1.2	.22
	Education	.05	1.348	.18
Step 2	LBCS modesty	.07	2.6	.01*
	Relationships	-.08	-1.3	.19
	detrimental sources	.00	.05	.96
	Divine predestination	-.02	-.50	.62
	Shameful illness	-.04	-.64	.53
	Symptomatic illness	-.00	-.059	.95

Note. ($N = 138$). LBCS = Latina Breast Cancer Screening Scale. *B* and *t* are shown from the last step with all variables entered. $R^2 = .12$ for Step 1; R^2 change = .17 for Step 2.

* $p < .05$

Figure Captions

Figure 1. Phase II: Participants' birth country.

Figure 2. Phase II: BSE in the past month.

Figure 3. Phase II: Frequency of BSEs in the past year.

Figure 4. Phase II: Time since last mammogram.

Figure 5. Phase II: Plans to get the next mammogram.

Figure 6. Phase III: Participants' birth country.

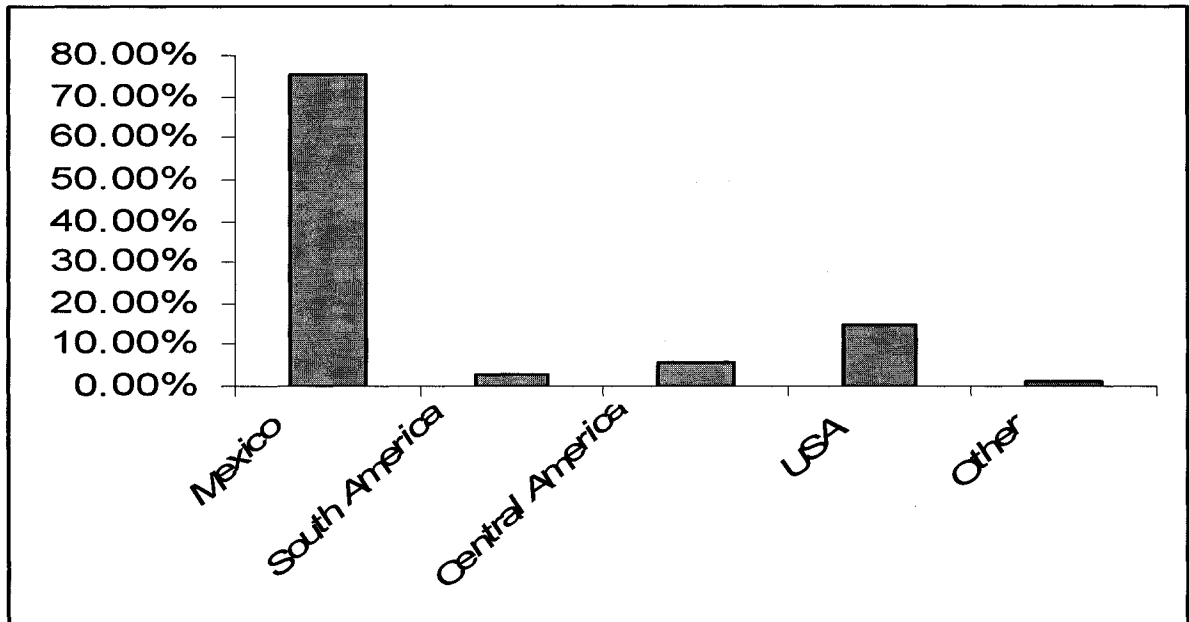
Figure 7. Phase III: BSE in the past month.

Figure 8. Phase III: Frequency of BSEs in the past year.

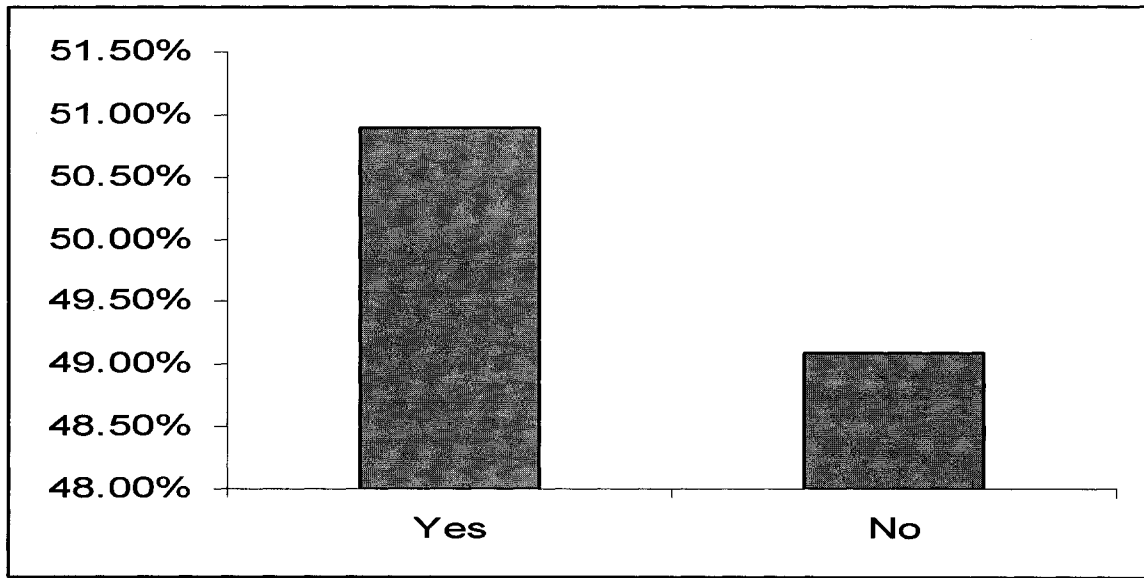
Figure 9. Phase III: Time since last mammogram.

Figure 10. Phase III: Plans to get the next mammogram.

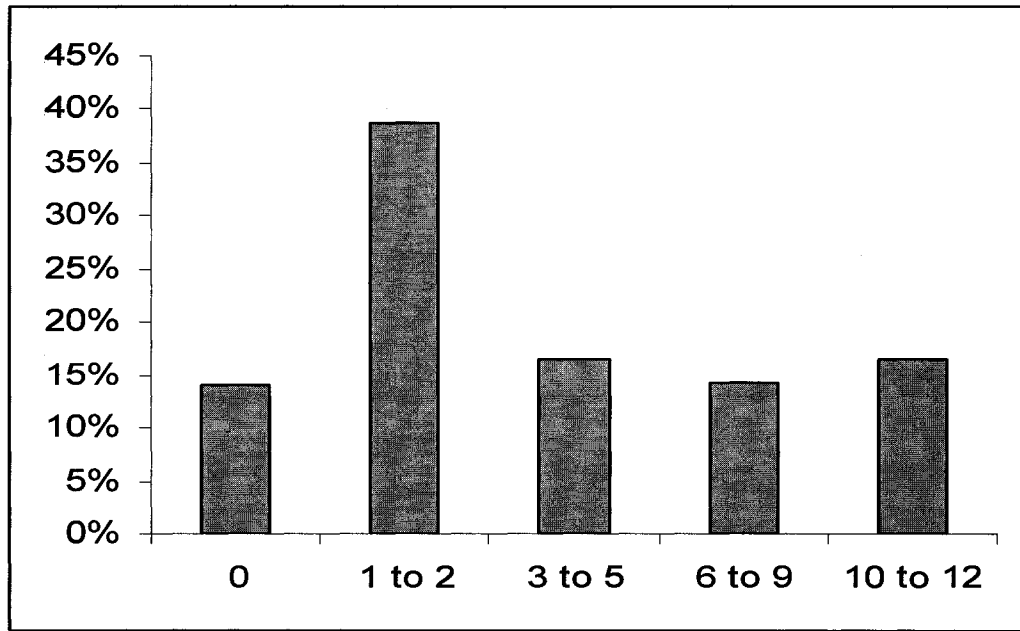
Participants Birth Country



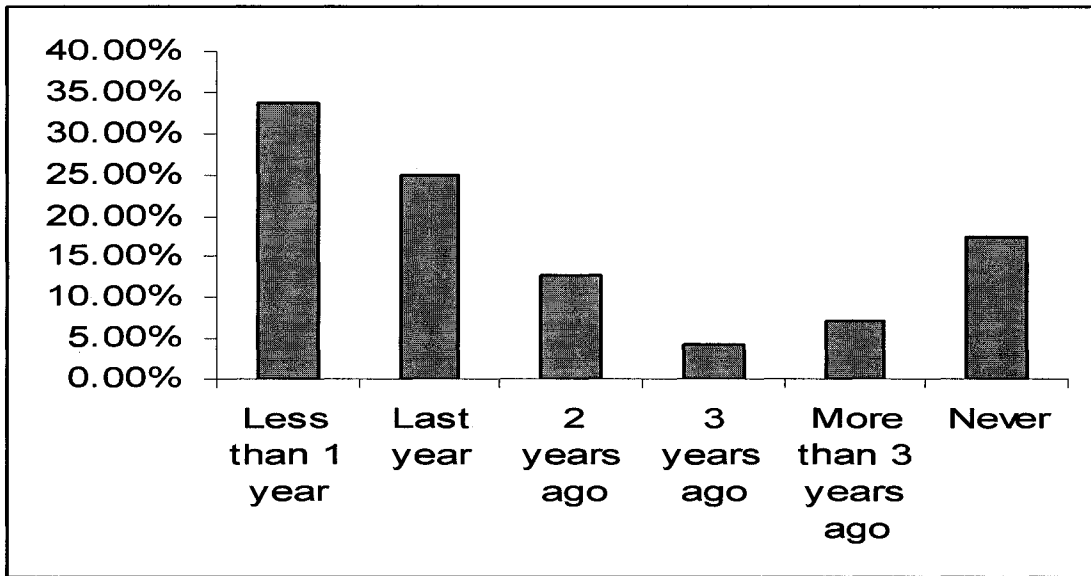
BSE in past month



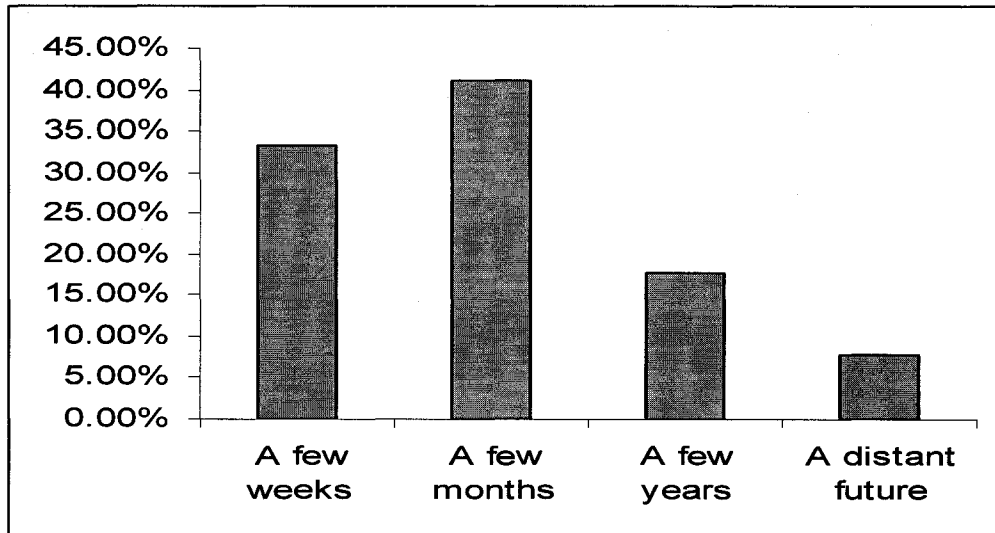
Frequency of BSEs in the past year



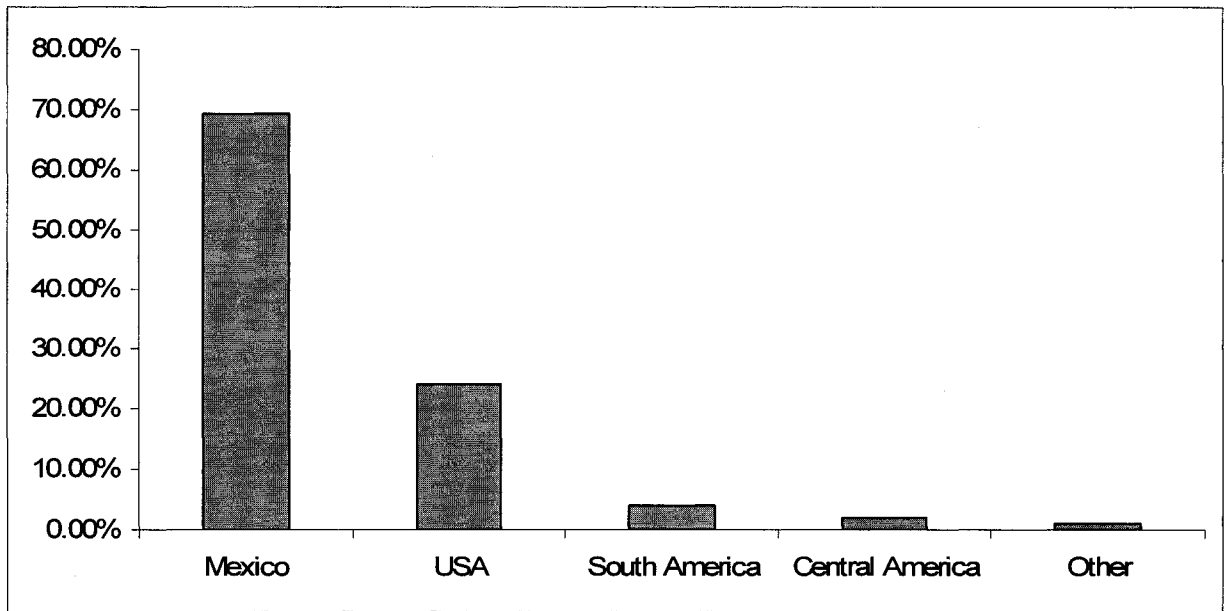
Time Since Last Mammogram



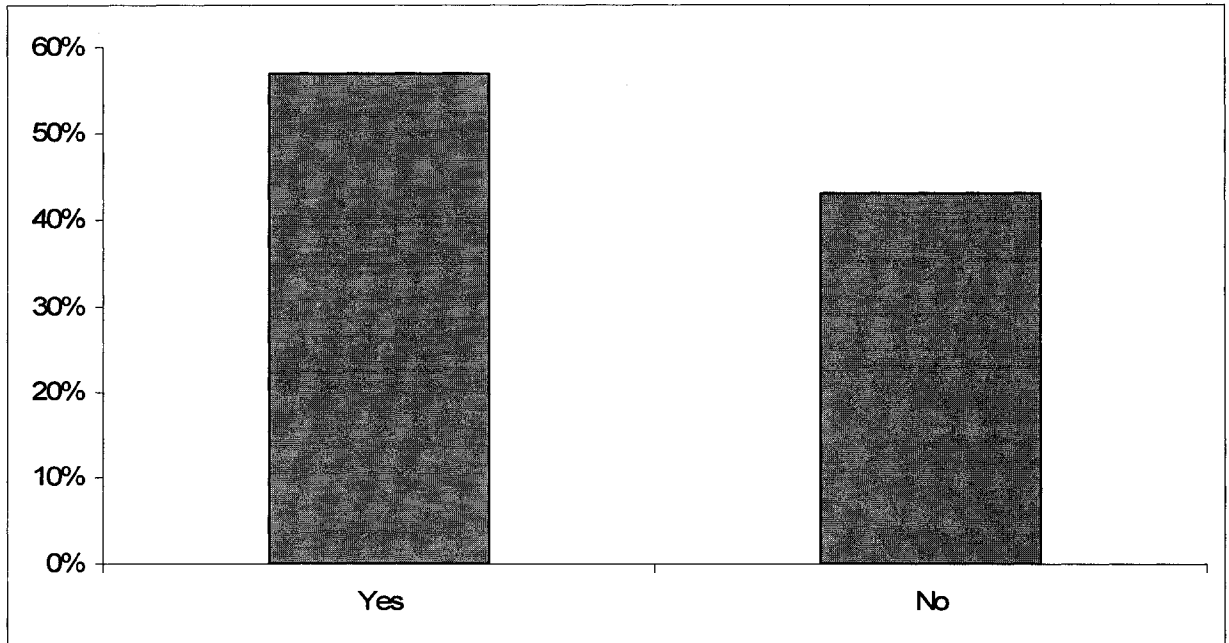
Plans To Get Next Mammogram



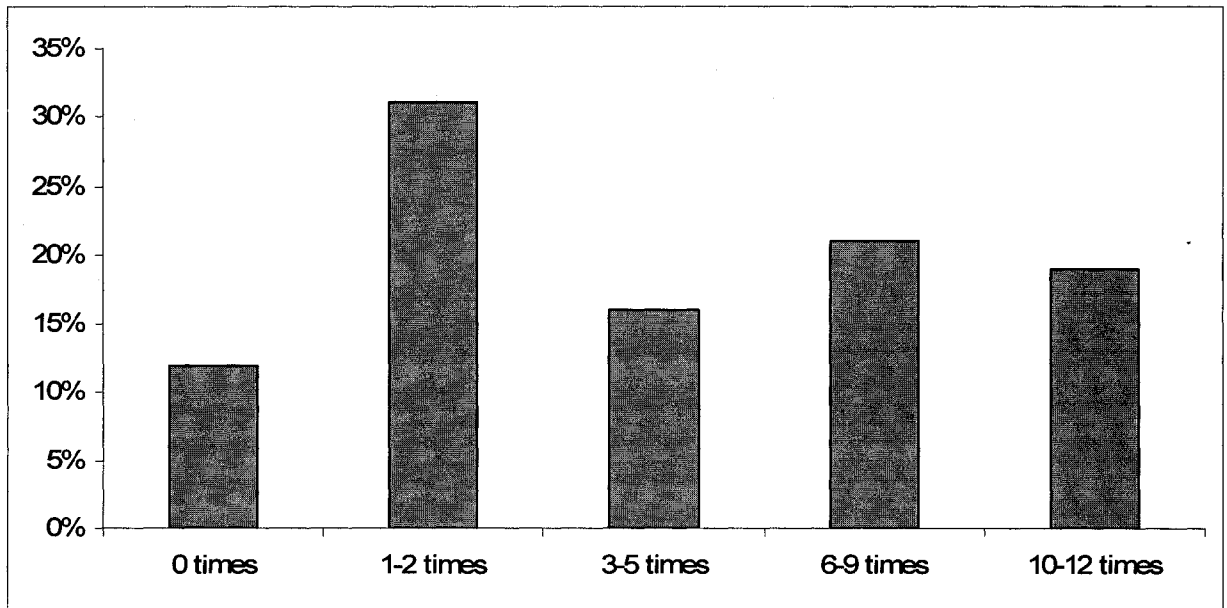
Participants Birth Country



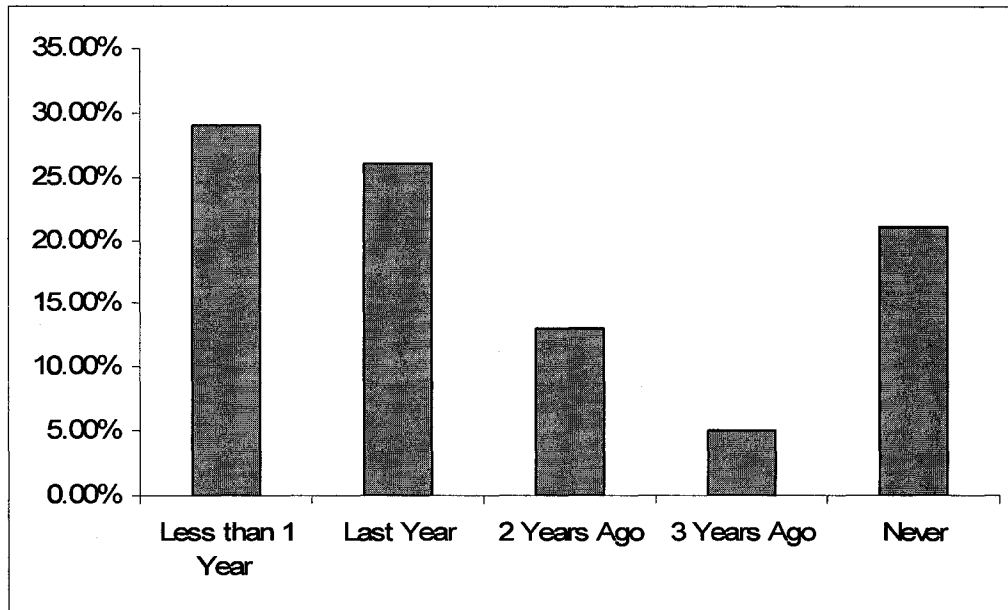
BSE in past month



Frequency of BSEs in the past year



Time Since Last Mammogram



Plans To Get Next Mammogram

