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Exploring Individual and Social Determinants of Health to Improve Access to Breast and Cervical Cancer Screening for Cambodian and Thai Women in California

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Exploring Individual and Social Determinants of Health to Improve Access to Breast and
Cervical Cancer Screening for Cambodian and Thai Women in California

A dissertation submitted in partial satisfaction of the requirements for the degree of
Doctor of Philosophy in Public Health

by

Parichart Sabado

2014
ABSTRACT OF THE DISSERTATION

Exploring Individual and Social Determinants of Health to Improve Access to Breast and Cervical Cancer Screening for Cambodian and Thai Women in California

by

Parichart Sabado

Doctor of Philosophy in Public Health

University of California, Los Angeles, 2014

Professor Marjorie Kagawa-Singer, Chair

Southeast Asian women, including Cambodians and Thais, experience higher rates of breast and cervical cancer incidence than any other racial/ethnic group in the U.S. Incidence of cervical cancer among Cambodian and Thai women is among the highest in the U.S. and incidence rates of breast cancer for these two groups are rapidly increasing, while rates are decreasing for other racial/ethnic groups. Cambodian and Thai women also experience higher rates of late-stage breast cancer than non-Hispanic White women, resulting in increased morbidity and mortality from the disease. Despite these staggering statistics, little is known
This dissertation sought to better understand breast and cervical cancer screening behavior among Cambodian and Thai women in California. Using a mixed methods approach, this study had the following aims: 1) identify individual- and environmental-level predictors of breast and cervical cancer screening among Cambodian and Thai women in Northern and Southern California, 2) examine the association between behavioral intention and mammogram adherence among Cambodian and Thai women in Southern California, 3) explore ethnic-specific, culturally-based norms and systems-related factors that influence the decision-making process for Cambodian and Thai women in Southern California, and 4) examine the role of community health navigators (CHNs) in assisting Cambodian and Thai women to overcome individual and environmental barriers to mammogram screening in Southern California.

Results from this study contribute to breast and cervical cancer literature and expands the existing literature on Cambodian and Thai women. By stratifying data analysis, the quantitative portion of this study identified community-specific individual-, social-, and environmental-level predictors of breast and cervical cancer screening. Additionally, the qualitative portion of this study found that while self-efficacy and health-care seeking behavior differ between Cambodian and Thai women in Southern California, these two groups were influenced by similar factors in the decision-making process. Lastly, using a mixed methods approach, this study found that Cambodian and Thai women were not able to act on their intentions to get screened without assistance from a CHN. This finding supports previous research that found behavioral intention to be a poor indicator of actual behavior in more disadvantaged communities.
The overall findings of this dissertation research have significant implications for how health disparities are conceptualized and addressed in diverse communities. This research recognizes that health behavior is a function of individual, social, and environmental factors and as such, a mixed methods approach is needed to better contextualize and interpret breast and cervical cancer screening practices for Cambodian and Thai women in Southern California. This dissertation research underscores the need to move beyond the traditional research paradigm of using quantitative methods alone and reinforces the value of using mixed paradigms and methods to better understand health behavior in order to design more effective interventions to eliminate health disparities.
The dissertation of Parichart Sabado is approved.

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2014
DEDICATION

To mom and dad,

and the countless women who die each year from breast and cervical cancer
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CHAPTER ONE: INTRODUCTION

A. Breast and Cervical Cancer Disparities

In the United States (U.S.), death rates from breast cancer have been declining since 1990, due in large part to early detection by mammogram screening and advancements in treatments (ACS 2011). Similarly, death rates from cervical cancer have decreased considerably over the past 40 years and most of the reduction has been attributed to the Papanicolaou (Pap) test. The mammogram and Pap test allow for early detection and timely treatment of breast and cervical cancer, respectively, resulting in a five-year survival rate of over 95.0% for both diseases (Ries, Melbert et al. 2007), if found in the earliest stages. Pap tests have the added benefit of detecting precancerous cells, thereby preventing cancer altogether. Despite the overwhelming evidence of the benefits of early detection, many Asian subgroups have the lowest breast and cervical cancer screening rates of all women (Ho and Dinh 2011), resulting in unnecessarily high and increasing incidence of cervical cancer and advanced breast cancer cases.

Between 2000 and 2007, the trends of invasive breast cancer incidence continued to rise significantly among Asian American women, while the rates declined among non-Hispanic White and African American women (Liu, Zhang et al. 2012). Additionally, an analysis of cervical cancer diagnoses over a 35-year period (1973-2008) found that Asian American women had 68.0% higher odds of being diagnosed with advanced cervical cancer in more recent years (second half of the study period compared to the first half) (Ward, Shah et al. 2012). Southeast Asian women, including Cambodians and Thais, experience higher rates of breast and cervical cancer incidence than any other racial/ethnic group in the U.S., including many other
Asian American subgroups. In Los Angeles County, incidence rates of breast cancer among Cambodian and Thai women are increasing very quickly, while rates are decreasing among women in other racial/ethnic groups (Cockburn, Liu et al. 2009) (See Figure 1). Southeast Asian women also experience higher rates of late-stage breast cancer than non-Hispanic White women (Heeden, White et al. 1999), resulting in increased morbidity and mortality from the disease. Additionally, Southeast Asian women have some of the highest cervical cancer incidence rates of all ethnic groups in the U.S. at 37.5 per 100,000 persons per year, compared to 8 per 100,000 persons per year for non-Hispanic White women (ACS 2005). Despite these staggering and significantly avoidable statistics, little is known about barriers and facilitators of screening for Cambodian and Thai women in the U.S., particularly for those living in Southern California, which is home to the largest populations of both groups in the U.S.
Figure 1. Trends in Incidence Rates for the Top 5 Cancers among Southeast Asian, Hispanic, African American, and Non-Hispanic White Women in Los Angeles County (1976-2006). Source: Cockburn M, Liu L, Deapen D (eds). Cancer in Los Angeles County: Trends by Race/Ethnicity, 1976-2006. Los Angeles Cancer Surveillance Program, University of Southern California, 2009. (Figure continues)
B. Research Approach, Specific Aims, and Research Questions

Disaggregating Data

Disaggregating Asian American data is the first step toward designing effective program strategies to eliminate cancer disparities among Cambodian and Thai women. However, studies often combine Cambodians and Thais with all other Southeast Asian American subgroups due to small samples sizes. This disregards the significant socio-demographic differences that exist between these two groups and other Southeast Asian Americans. Moreover, preliminary analyses of data used for this study showed that Cambodians and Thais in Southern California differed markedly from Cambodian and Thai women in Northern California with respect to socio-demographic profile, social networks, and availability of resources. Therefore, community-specific data for Cambodian and Thai women are needed to inform cancer prevention efforts, as it is inaccurate and inappropriate to apply data assumptions and results from one region of the U.S. to another. Each group experiences its own unique set of health and community challenges and conditions (Islam, Trinh-Shevrin et al. 2009) that lead to varying rates of morbidity and mortality. However, these variations are rarely included in studies of small population groups (Bourdieu 1990; Pasick, Barker et al. 2009).

While an increasing number of studies have documented individual and environmental factors associated with barriers and facilitators to breast and cervical cancer screening among specific Asian American subgroups (Ho, Yamal et al. 2005; Eun, Lee et al. 2009; Ma, Toubbeh et al. 2009; Fang, Ma et al. 2011; Ma, Fang et al. 2012), studies that focus on Cambodians and Thais in Southern California are lacking, despite rapidly increasing cancer rates in these groups. As a result, limited information exists on factors that influence cancer screening among these two groups. Given this significant gap in the cancer literature, this study explores breast and
cervical cancer screening behavior among Cambodian and Thai women in Southern California and examines both individual and environmental predictors of screening for each group of women. Using women in Northern California as a comparison group, this study also examines inter-regional differences in predictors of breast and cervical cancer screening to better understand how community-specific social and environmental characteristics affect cancer screening behavior, thereby highlighting the importance of not only disaggregating data by ethnicity, but also by geographic location.

Addressing Multiculturalism in Cancer Research

The complexities surrounding cancer screening behavior is an example of the multiple influences of individual-, social-, and environmental-level factors on health behavior. Yet, many cancer prevention programs still rely on traditional social behavior theories that are based on individual cognition and rational decision-making. This focus on individual-level factors results in an oversimplification of the influence of environmental factors on health behavior. Traditional social behavior theories, such as the Health Belief Model and Social Cognitive Theory, have their origin in Western psychology and the ideology of individualism. Cultures with an individualistic orientation are believed to value autonomy and view the individual as detached from relationships and from the community (Triandis 1995). These beliefs are unfamiliar to Cambodians and Thais, since individuals from these communities are more inclined to have a collectivistic worldview and favor attitudes that reflect sociability, interdependence, and family integrity (Triandis 1995). This is evident in the tendency for individuals in the Cambodian and Thai community to live collectively in extended families and communities, and involve family members in decision-making processes. Thus, this study uses a
mixed methods approach to examine cancer screening behavior among Cambodians and Thais, paying particular attention to social norms that influence the decision-making process.

The Western notion of individual responsibility and patient autonomy prevents a complete understanding of factors that enable women in Cambodian and Thai communities to obtain cancer screening because this viewpoint underestimates the influence of alternative social factors. It disregards the very cultural foundation of human behavior; that is, behavior is a result of the interaction between individuals and their social context (Pasick, Burke et al. 2009). Focusing solely on individual level factors places the responsibility of cancer screening on the individual, even when he or she is faced with a myriad of individual and environmental barriers. Because of these barriers, individuals may fail to get screened, despite having high levels of intention to do so. Yet, the common approach to increase breast and cervical cancer screening in diverse communities often includes an educational component to increase knowledge only, and behavioral intention is used as the main outcome when actual screening cannot be measured (Valdez, Banerjee et al. 2002; Levy-Storms and Wallace 2003; Ham 2005). As a result, the impact of these community efforts is often truncated and/or short-lived (Jenkins, McPhee et al. 1999) due to cultural and access-related barriers that are unrecognized and/or unaddressed. As such, this study also examines behavioral intention and its effect on cancer screening in each Southeast Asian community, paying particular attention to women in Southern California who are significantly more disadvantaged and experience a greater number of barriers than women in Northern California.

This dissertation addresses three key but understudied cancer prevention issues among Cambodian and Thai women. First, despite increasing rates of breast and cervical cancer among these two groups, data on individual and environmental predictors of breast and cervical cancer
screening for these groups is limited. Although Southern California is home to the largest U.S.-
based Cambodian and Thai populations, no regional data on breast and cervical cancer screening
predictors exist for these women. Second, research on the association between behavioral
intention and actual behavior is limited, particularly among members of disadvantaged
communities. Third, the decision-making process among Cambodian and Thai women in
Southern California is not fully understood, including the influence of individual, cultural, and
systems-related factors on a woman’s decision to be screened for breast or cervical cancer.

To that end, the specific aims of this dissertation are to 1) identify individual- and
environmental-level predictors of breast and cervical cancer screening among Cambodian and
Thai women in Northern and Southern California, 2) examine the association between behavioral
intention and mammogram adherence among Cambodian and Thai women in Southern
California, 3) explore ethnic-specific, culturally-based norms and systems-related factors that
influence the decision-making process for Cambodian and Thai women in Southern California,
and 4) examine the role of Community Health Navigators (CHNs) in assisting Cambodian and
Thai women to overcome individual and environmental barriers to mammogram screening in
Southern California.

This study used both quantitative and qualitative data from the Promoting Access to
Health (PATH) for Women project\(^1\) to address these research aims. The mixed methods
approach used in PATH for Women allowed for a more in-depth analysis of the effects of social
context, which is particularly important when trying to understand health behavior in
disadvantaged communities. More specifically, the study used an explanatory design, which

\(^1\) Promoting Access to Health (PATH) for Women was a CDC-funded collaboration (#5U58DP001006-05) of seven
community-based organizations and two universities to address barriers to breast and cervical cancer screening
among Cambodian, Chamorro, Laotian, Samoan, Thai, Tongan, and Vietnamese women in Southern California.
consists of two phases (quantitative phase followed by qualitative phase), where the qualitative data are utilized to explain or enhance quantitative findings (Creswell and Plano Clark 2007).

The quantitative portion of PATH for Women sought to answer the following research questions:

1. What are the individual-, social-, and environmental-level predictors of breast and cervical cancer screening adherence among Cambodian and Thai women in Northern and Southern California?

2. What are the inter-regional differences and similarities with respect to predictors of breast and cervical cancer screening adherence among Cambodian and Thai women?

3. Is behavioral intention associated with mammogram and Pap test adherence among Cambodian and Thai women in Northern and Southern California?

The qualitative portion of PATH for Women sought to answer the following questions:

1. What are the ethnic-specific, culturally-based norms and systems-related factors that influence the decision-making process for Cambodian and Thai women in Southern California?

2. What role do CHNs play in accessing breast screening services for these women?

C. Significance

This research makes three significant contributions to the cancer literature. First, despite the increasing incidence of breast cancer and high rates of cervical cancer among Southeast Asian women, knowledge of factors associated with cancer screening for Cambodian and Thai women in California is limited, particularly for women in Southern California. This dissertation research is the first to identify ethnic-specific individual and environmental predictors of breast and cervical cancer screening for Cambodian and Thai women in California. Findings from this
research could be used to design more effective, community-specific cancer prevention programs that better address individual and systems-related barriers to screening, thereby reducing unnecessary morbidity and mortality from both diseases in these two groups of women.

Second, this dissertation research has research implications, as it is the first to take a mixed methods approach to better understand breast and cervical cancer screening behavior among Cambodian and Thai women. While Cambodia and Thailand are neighboring countries with similar cultures, including beliefs, religion, and traditional practices, Cambodian and Thai Americans have very different migration histories and socio-demographic profiles that may affect screening behavior. A combination of quantitative and qualitative research approaches allows for the identification of ethnic-specific predictors of screening and a closer examination of the similarities and differences between these two groups of women with regard to the decision-making process. The qualitative portion of this research provides the added dimension of identifying the influence of social context, which is essential in research on health behavior overall, but even more so when working with diverse communities.

Finally, this research has significant theoretical implications. The conceptual framework for this study recognizes the juxtaposition of the influence of both Southeast Asian individual and societal norms and European American individual and societal norms on healthcare-seeking behavior among Cambodian and Thai women. Additionally, the framework recognizes that health behavior is a function of the interaction of individual, social, and environmental factors and that a consideration of these factors is critical in the understanding of health behavior in more disadvantaged communities. The conceptual framework for this study could be a model for future innovative, theoretically-based work to eliminate health disparities in diverse communities.
CHAPTER TWO: REVIEW OF THE LITERATURE

A. Breast and Cervical Cancer in Cambodian and Thai Women

According to the U.S. Census, the Asian American population as a whole increased by 48.0% in the past decade, making it the fastest growing racial/ethnic minority group in the U.S. (Taylor, Cohn et al. 2012). Within the Asian American population, the subgroup of Southeast Asians are newer immigrants who can trace their origins to Brunei, Myanmar (formerly known as Burma), Kampuchea (formerly known as Cambodia), Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, or Vietnam (DFAT 2012). Southeast Asians are among the most socially- and medically-underserved ethnic groups in the U.S. Lack of health insurance, limited English proficiency, and cultural isolation are some of the known barriers that prevent Southeast Asian women from utilizing health and social services available to the mainstream population (Foo, Kagawa-Singer et al. 2002). Consequently, Southeast Asian women experience significant morbidity from diseases for which effective early detection and treatments are available, particularly for breast and cervical cancer.

As epidemiologic evidence indicates, breast and cervical cancer are growing public health concerns among the 231,456 Cambodians and 166,245 Thais that live in the U.S. (Census 2010). Cambodian and Thai women have the lowest rates of screening of all ethnic groups due to barriers that often go unrecognized or unaddressed. If left unaddressed, trends of late-stage breast cancer among these women will likely increase, as studies show that breast cancer risk increases with time in the U.S. (Ziegler, Hoover et al. 1993; Saphir 1997; Lai and Arguelles
Adding to the problem is the inevitable rise in cancer rates as populations age.

Among Southeast Asian Americans, Cambodians and Thais are the most understudied populations in cancer research. In 2003, Wannasuntad et al. reviewed published literature and a database of federally-funded studies in the U.S. and found no cancer-related research involving Thais (Wannasuntad, May et al. 2003). In the eight years following this review, only one research study (Tanjasiri, Kagawa-Singer et al. 2002) and its two publications (Tsui and Tanjasiri 2008; Love, Mouttapa et al. 2009) included Thais. Cambodians fared slightly better and were included in a number of research studies on breast and cervical cancer (Kelly, Fores Chacori et al. 1996; Yi 1996; Taylor, Jackson et al. 1998; Taylor, Schwartz et al. 1999; Tanjasiri, Kagawa-Singer et al. 2002; Tu, Yasui et al. 2002; Yi 2003). However, only one study included Cambodian women in Southern California – the largest Cambodian population in the U.S.

Cambodian and Thai women in Southern California face a myriad of barriers to breast and cervical cancer screening. Among PATH for Women project participants in Southern California, a disproportionate number of Cambodian women have less than a high school education and more than half of Cambodian and Thai women do not speak English very well (Dang [unpublished work]). Consequently, many are not aware of services available to the general population or are not able to access these services due to limited English proficiency (Nguyen, Tanjasiri et al. 2008). Additional barriers to breast and cervical cancer screening include lack of transportation, family obligations, and long work hours that limit women from visiting a physician during regular clinic hours (Foo, Kagawa-Singer et al. 2002).

Cancer prevention and screening can be considerably more difficult for Cambodians than most other ethnic minority groups due to competing mental health problems. Many Cambodians
have experienced extreme trauma, including pre-migration violence in Cambodia when they were targeted for extermination as well as years of horrendous living conditions in refugee camps (Dinh 2009). Rates of mental health disorders, such as post-traumatic stress disorder (PTSD) (62.0%) and major depression (51.0%) remain high among Cambodians living in the U.S. (Marshall, Schell et al. 2005), leading to high rates of cigarette smoking, alcohol consumption, and domestic violence (D'Avanzo, Frye et al. 1994; D'Avanzo 1997).

Additionally, many war refugees experienced cultural shock due to a sudden departure from their native countries and forced resettlement in geographic regions with unfamiliar climate, geography, and culture (Chung, Bemak et al. 1998; Dinh 2009).

For Cambodian women, the culture shock of gender role reversal in the U.S. may have had the most direct impact on breast and cervical cancer disparities. Upon resettlement, Cambodian women were forced to work outside the home for the first time; women often arrived as widows or their husbands faced difficulty finding work due to limited English proficiency, discrimination, and lack of marketable skills (Dinh 2009). An unequal burden of domestic responsibilities, however, meant women had to work both outside and inside the home, leaving little time for personal matters such as healthcare, and in particular, breast and cervical cancer screening (Foo, Kagawa-Singer et al. 2002; Dinh 2009).

Limited information on breast and cervical cancer screening for Cambodians and Thais can be attributed in part to two reasons. First, due to their relatively small population sizes, many state and national surveys often aggregate Cambodians and Thais with other Southeast Asian subgroups. Second, these surveys are typically administered only in English and Spanish, thereby excluding individuals with limited English fluency. Moreover, even less information exists on rates of disease since the denominator is often difficult to assess or nonexistent in many
states and tumor registries. A review of breast cancer incidence between 1990 and 2008 among select Asian American subgroups indicated that breast cancer incidence among Cambodian women increased from 11.6 per 100,000 persons per year to 43.4 per 100,000 persons per year (Gomez, Noone et al. 2013). Miller et al. reported cervical cancer incidence rates of 15.3 per 100,000 persons per year among Cambodian women, compared to 8.1 per 100,000 persons per year among non-Hispanic White women (Miller, Chu et al. 2008). Using data from California and Puget Sound cancer registries, Kem and Chu reported a similar cervical cancer incidence rate of 15.0 per 100,000 persons per year among Cambodian women, compared to 7.7 per 100,000 persons per year among non-Hispanic White women (Kem and Chu 2007). Additionally, the same study found Cambodian women had a 95% higher risk for developing cervical cancer compared to non-Hispanic White women (Kem and Chu 2007).

No published data are available on breast and cervical cancer rates for Thai women in the U.S. However, in Thailand, the age-adjusted incidence rate of cervical cancer for women is 27 per 100,000 persons per year, making it the most common cancer among women (Khuhaprema, Srivatanakul et al. 2007). Approximately 7,000 new cervical cancer cases are diagnosed in Thailand each year and an average of seven women die of the disease each day (Khuhaprema, Srivatanakul et al. 2007). High cervical cancer rates in Thailand suggest that rates may also be high among Thai women in the U.S., particularly among recent immigrants.

**Mammogram Utilization**

In the U.S., 67.1% of all women report having had a mammogram within the past two years (ACS 2011). Various community-level studies report much lower screening rates among Cambodian and Thai women. Rates for mammogram adherence for Cambodian women are as
low as 11.4% (Ma, Shive et al. 2009) and 23.0% (Tu, Yasui et al. 2002). No available data on mammogram adherence exist for Thai women. However, a separate study reported that in 2001, 66.7% of Thai women in California received a mammogram at least once in their lifetime (Dang, Lee et al. 2010). A lifetime mammography rate of 66.7% suggests that mammogram adherence among Thai women is likely significantly lower than regular screening (annually beginning at age 40 years) and lower than the Healthy People 2010 goal of 70% for regular screening adherence (USDHHS 2000)

Pap Test Utilization

In the U.S., 78.3% of all women have had a Pap test within the past three years (CDC 2007). Rates of cervical cancer screening among Cambodian and Thai women are significantly lower than the U.S. average. In 1998, Taylor et al. found that only 32.0% of Cambodian women in their study were up-to-date with Pap test utilization (Taylor, Jackson et al. 1998), considerably lower than the Healthy People 2010 objective of 90% for screening adherence (USDHHS 2000). In another study of women in Minnesota, only 16.0% of Cambodian women reported screening adherence, compared to 37.0% of non-Cambodians (Kelly, Fores Chacori et al. 1996). Notably, other studies on Cambodian women have shown lifetime cervical cancer screening rates that were generally higher than screening adherence, at 71.0% (Dang, Lee et al. 2010) and 76.0% (Taylor, Jackson et al. 1998) among Cambodian women in California and Seattle, respectively. However, data on screening adherence are more informative than screening rates, as some women may mistakenly report routine pregnancy-related pelvic examinations as Pap tests (Xu, Ross et al. 2005). While no data exist on screening adherence for Thai women, Love, Mouttapa et al. (2009) and Dang et al. (2010) found that 81.7% and 89.2% of women in their respective
studies received a Pap test at least once. However, these data must be interpreted with caution because, as previously mentioned, lifetime Pap test utilization is a poor indicator of recommended regular cervical cancer screening.

B. Factors Associated with Breast and Cervical Cancer Screening

Barriers to cancer screening are presented in Table 1. Low rates of breast and cervical cancer screening among Asian Americans have been associated with limited disease knowledge, lack of health insurance, limited English fluency, and culturally-based social norms (Do, Taylor et al. 2007; Lee, Tripp-Reimer et al. 2007; Schwartz, Fakhouri et al. 2008; Chen 2009; Fang, Ma et al. 2011; Gregg, Nguyen-Truong et al. 2011; Ma, Fang et al. 2012; Thorburn, Kue et al. 2012). Studies show that Cambodian and Thai women have relatively low levels of knowledge of breast and cervical cancer, screening guidelines, and cancer risk factors (Kelly, Fores Chacori et al. 1996; Taylor, Schwartz et al. 1999; Jackson, Taylor et al. 2000; Tsui and Tanjasiri 2008; Dang, Lee et al. 2010). Alarmingly, 71.0% of Cambodian and Vietnamese women in one study did not know what cancer was and 74.0% were unable to identify a cancer prevention strategy (Phipps, Cohen et al. 1999). Another study noted that some Cambodian women believe that cervical cancer is an “American disease” (Jackson, Taylor et al. 2000) while others believe it is incurable and contagious (Kelly, Fores Chacori et al. 1996; Jackson, Taylor et al. 2000). Some report these beliefs based upon limited knowledge about disease etiology (Kelly, Fores Chacori et al. 1996). As such, Cambodian women consider a cervical cancer diagnosis stigmatizing and avoid Pap tests for fear of abnormal results (Taylor, Jackson et al. 1998). The belief that only sexually active women are at risk for cervical cancer is common and a number of studies reported associations between this belief and receipt of cervical cancer screening for both Cambodian and
Table 1. Barriers to breast and cervical cancer screening among Cambodian and Thai women

<table>
<thead>
<tr>
<th>Barrier to cancer screening</th>
<th>Cambodian</th>
<th>Thai</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of health insurance</td>
<td>✔️</td>
<td>✔️</td>
<td>(Ma, Toubbeh et al. 2009)</td>
</tr>
<tr>
<td>Limited English fluency</td>
<td>✔️</td>
<td>✔️</td>
<td>(Yi 1996; Taylor, Jackson et al. 1998; Tsui and Tanjasiri 2008; Ma, Shive et al. 2009)</td>
</tr>
<tr>
<td>Fear and embarrassment</td>
<td>✔️</td>
<td>✔️</td>
<td>(Kelly, Foars Chacori et al. 1996; Taylor, Jackson et al. 1998; Taylor, Schwartz et al. 1999; Taylor, Jackson et al. 2000; Tu, Yasui et al. 2002)</td>
</tr>
<tr>
<td>Unfamiliarity with U.S. healthcare system</td>
<td>✔️</td>
<td>ND</td>
<td>(Uba 1992)</td>
</tr>
<tr>
<td>Unfamiliarity with Western medical methods</td>
<td>✔️</td>
<td>ND</td>
<td>(Uba 1992)</td>
</tr>
<tr>
<td>Long work hours</td>
<td></td>
<td>✔️</td>
<td>(Nguyen, Tanjasiri et al. 2008)</td>
</tr>
<tr>
<td>Distrust of Western Medicine</td>
<td>✔️</td>
<td>ND</td>
<td>(Uba 1992)</td>
</tr>
<tr>
<td>Attitudes toward suffering</td>
<td>✔️</td>
<td>ND</td>
<td>(Uba 1992)</td>
</tr>
<tr>
<td>Belief in Karma</td>
<td>✔️</td>
<td>ND</td>
<td>(Uba 1992)</td>
</tr>
</tbody>
</table>

ND=No Data

Thai women (Taylor, Jackson et al. 1998; McGarvey, Clavet et al. 2003; Tsui and Tanjasiri 2008). This belief is especially a deterrent to cervical cancer screening for single women because of the associated stigma of pre-marital sex. Similarly, divorced and widowed women often report screening as not being necessary when they are not sexually active (Taylor, Jackson et al. 1998; Taylor, Schwartz et al. 1999; Carey Jackson, Taylor et al. 2000; McGarvey, Clavet et al. 2003; Tsui and Tanjasiri 2008). Other misconceptions relate to knowledge of disease symptoms. Compared to breast lumps and pain, signs such as bloody discharge, puckered breast skin, and changes in breast size were less often recognized as symptoms of breast cancer (Dang,
Lee et al. 2010). Additionally, studies have shown that many women believe breast and cervical cancer screening to be unnecessary without symptoms (Taylor, Jackson et al. 1998; Dang, Lee et al. 2010). Such beliefs may be one reason why some women have late-stage cancer upon first diagnosis.

Demographic and socio-economic factors are independently associated with cervical cancer screening. Among Cambodian women, age was a significant predictor of Pap test utilization; women up to age 59 had greater odds of receiving at least one screening (Taylor, Schwartz et al. 1999) and being up-to-date with screening (Taylor, Jackson et al. 1998; Taylor, Schwartz et al. 1999) than women who were 60 years and older. Being married was also associated with lifetime cervical cancer screening and screening adherence (Taylor, Jackson et al. 1998). Yi found that Cambodian women who had children were more likely to have had a Pap test, further suggesting that cervical cancer screening rates may be overestimated because women with children may equate reproductive health services during prenatal care with Pap tests (Yi 1996). Both income and education are also found to be significantly associated with cervical cancer adherence among Cambodian women. Among women with less than $10,000 annual household income, nearly 75.0% reported having never being screened; compared to no women who reported having never been screened among those with greater than $30,000 annual household income (Ma, Toubbeh et al. 2009). Additionally, Ma and colleagues found that among women with less than a high school education, 77.6% reported having never been screened compared to 24.0% of women with at least a high school education (Ma, Toubbeh et al. 2009). With regard to employment status, Tsui and Tanjasiri found that Thai women who were employed were over two times more likely to ever have had a Pap test compared with women who were unemployed (Tsui and Tanjasiri 2008). Being uninsured is the single most significant
barrier to cervical cancer screening, consistent with findings in one study in which 90.0% of Cambodian women without health insurance reported never having been screened, compared to 55.7% of those with current coverage (Ma, Toubbeh et al. 2009).

Compared to more recent immigrants, Cambodian women who have been in the U.S. for a longer period of time are also more likely to have had a Pap test at least once (Yi 1996; Taylor, Schwartz et al. 1999; Yi 2003). The amount of time spent in the U.S. is related to English fluency, which is also associated with cancer screening among both Cambodian and Thai women (Yi 1996; Taylor, Jackson et al. 1998; Tsui and Tanjasiri 2008; Ma, Shive et al. 2009). Ma and colleagues reported a dose-response relationship between English fluency and cervical cancer screening: higher levels of English fluency were associated with greater proportions of women receiving a Pap test. Among Cambodian women who did not speak English at all or did not speak English well, 87.9% and 54.2%, respectively, reported having never received a Pap test. All women who described themselves as speaking English well or very well also reported having received a Pap test at least once in their lifetime (Ma, Shive et al. 2009). Tsui and Tanjasiri found that Thai women in Northern California who spoke only English, or were equally fluent in English and Thai, were almost twice as likely to have ever had a Pap test compared to women who reported speaking only Thai (Tsui and Tanjasiri 2008). In another study, only 11.2% of Cambodian women and 21.8% of Thai women in Southern California reported receiving information on breast and cervical cancer from their healthcare providers (Dang, Lee et al. 2010). This lack of information transfer from providers to patients is likely attributed to a language barrier that prevents effective patient-provider communication.

Despite studies that show an association between English fluency and cancer screening, Cambodian and Thai women usually encounter a lack of language-concordant practitioners and
in-language educational materials. Tanjasiri and colleagues explored Southeast Asian and Pacific Islander women’s access to reproductive health services in Southern California and found that only 6.0% of Thais lived within one mile of social service facilities and Every Woman Counts (EWC)\(^2\) facilities with language-concordant physicians and staff, compared to 36.0% of Vietnamese (Tanjasiri, Tran et al. 2004). These data are especially troubling in light of evidence that physician recommendations significantly increase the likelihood of cancer screening for both Cambodian and Thai women (Taylor, Schwartz et al. 1999; Tsui and Tanjasiri 2008). Taylor and colleagues reported that Cambodian women whose physicians recommended a Pap test were five times more likely to have ever had a Pap test and three times more likely to have had a Pap test during the previous year (Taylor, Schwartz et al. 1999). Thai women who agreed that having a physician’s recommendation would make it more likely for them to get a Pap test in the future were seven times more likely to have ever had a Pap test compared with women who disagreed with that statement (Tsui and Tanjasiri 2008).

Fear and embarrassment have also been significant barriers to breast and cervical cancer screening among Cambodian women (Kelly, Fores Chacori et al. 1996; Taylor, Jackson et al. 1998; Taylor, Schwartz et al. 1999; Jackson, Taylor et al. 2000; Tu, Yasui et al. 2002). Studies have shown that women prefer to have a female physician due to embarrassment over the invasive nature of the Pap test (Kelly, Fores Chacori et al. 1996; Taylor, Jackson et al. 1998; Jackson, Taylor et al. 2000). Fear of pain associated with the Pap test and of cancer treatment have also prevented many Cambodian women from being screened (Taylor, Jackson et al. 1998;

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\(^2\) Every Woman Counts (EWC) provides free clinical breast exams, mammograms, pelvic exams, and Pap tests to California’s uninsured women. The mission of the EWC is to save lives by preventing and reducing the devastating effects of cancer for Californians through education, early detection, diagnosis and treatment, and integrated preventive services, with special emphasis on the underserved. EWC is part of the Department of Healthcare Service’s Cancer Detection and Treatment Branch (CDTB).
Jackson, Taylor et al. 2000). While mammograms are not as invasive as Pap tests, Tu and colleagues report similar findings, where having a female physician was significantly associated with both lifetime screening and adherence (Tu, Yasui et al. 2002).

C. Past Efforts to Address Breast and Cervical Cancer among Cambodian and Thai Women

When asked what strategies might work to increase breast and cervical cancer screening, 81.0% of Cambodian women in one study indicated a need for more education about the diseases, their severity, and the benefits of early detection (McGarvey, Clavet et al. 2003). The same group of women also indicated a need for lay health workers (LHWs) for in-language education and assistance. Bilingual and bicultural LHWs are included in a number of breast and cervical cancer prevention projects to help schedule appointments for screening and follow-up care (Kelly, Fores Chacori et al. 1996; Jackson, Taylor et al. 2000; Nguyen, Tanjasiri et al. 2008). Other common strategies include group discussions and use of media to disseminate health messages (Kelly, Fores Chacori et al. 1996; Jackson, Taylor et al. 2000; Nguyen, Tanjasiri et al. 2008).

The PATH for Women project to increase breast and cervical cancer among Cambodian women in Southern California used small group sessions and mass media to deliver education on a large scale (Nguyen, Tanjasiri et al. 2008), whereas programs targeting women in Washington (Jackson, Taylor et al. 2000) and Minnesota (Kelly, Fores Chacori et al. 1996) used small group sessions alone. Some programs have also included more innovative strategies that have been proven effective to increase knowledge. For example, a cervical cancer prevention program targeting Thai women utilized an entertainment-style educational video to deliver information
(Love, Mouttapa et al. 2009), a strategy that was previously shown to create more favorable attitudes than traditional educational videos (Singhal and Rogers 1999).

A majority of previous interventions were able to show a significant increase in cancer awareness among participants. Love and colleagues found that after viewing the entertainment-style educational video and a small group discussion, 89.0% of women who previously reported not liking to talk about Pap tests changed their minds at follow-up (Love, Mouttapa et al. 2009). Increasing a woman’s comfort level to discuss cervical cancer screening with her doctor is important in light of previous findings that show a significant association between a physician’s recommendation and cancer screening among Cambodian and Thai women (Taylor, Schwartz et al. 1999; Tsui and Tanjasiri 2008). Jackson and colleagues employed LHWs to provide in-home educational sessions to Cambodian women and offered tailored logistical assistance, such as clinic referrals, appointment scheduling, medical interpretation, and transportation assistance (i.e., taxicab vouchers or bus passes) (Jackson, Taylor et al. 2000). While there was no significant difference between the intervention and control group, an increase in cervical cancer screening in both groups may be indicative of both the project’s success and the close-knit nature of the Cambodian community.

In another study, Kelly and colleagues organized group appointments to help women overcome additional apprehension and transportation barriers (Kelly, Fores Chacori et al. 1996). A Cambodian project staff member drove the group of women to the clinic and accompanied each of them to their appointments, and a medical interpreter was available to reduce any language barriers. Women waited together until everyone in the group received a Pap test and then they traveled together to receive mammograms at the same clinic. Familiar snack foods, such as tea and egg rolls, were provided to help reduce the discomfort of waiting. A process
evaluation revealed that women preferred a less crowded environment and as a result, the remaining appointments took place in a quieter area of the clinic. These efforts to tailor project activities to address the women’s needs and to make clinic visits more comfortable resulted in an increase in cervical cancer screening by almost 60% (16.0% to 74.0%) within this population from baseline to follow-up.

D. Culture, Race, and Ethnicity, and Cancer

Race, culture, and ethnicity are terms used extensively in public health research, including cancer-related studies, but each concept remains ill-defined. This leads to significant overlap in definitions and poor operationalization of each concept (Kagawa-Singer, Dressler et al. forthcoming). Culture, for example, is frequently and incompletely operationalized as a system of values and beliefs. In research, culture is typically viewed negatively as a barrier to breast and cervical cancer screening, but this does not account for any structural barriers that more directly impact screening rates, and notably, does not assess cultural assets that may promote health. Using race, culture, and ethnicity as proxy variables wastes valuable time and resources that could be used to address factors that are amenable to change.

The influence of culture on screening behavior has received considerable attention in cancer research. However, it is narrowly defined in cancer research, considering the broader anthropological view that human behavior is guided not by universal laws, but by local meanings that individuals attach to events (Keifer 2007). The process of attaching meanings to objects and behavior is bounded by social context, and is situation- and time-specific (Pasick, Burke et al. 2009). Culture is viewed as a cognitive map that individuals learn and use to navigate their way in life (Spradley 1979; Campos and Johnson 1990). It is also described as the learned patterns of
thoughts and behavioral characteristics of a particular social group, including knowledge, belief, technology, values, norms, arts, morals, law, and customs that determine the way people order the world and make it intelligible (Hunt 1996). These patterns of behavior become commonplace over time and are performed outside of conscious awareness (Burke, Joseph et al. 2009). Individuals may not be able to fully explain why they do what they do (Nisbett and Wilson 2005), which is why survey-based assessments of individual beliefs do not fully explain human behavior (Bourdieu 1990).

According to the USDHHS Office of Minority Health, culture is defined as “integrated patterns of human behavior that include the language, thoughts, communications, actions, customs, beliefs, values, and institutions of racial, ethnic, religious, or social groups” (2000). Pasick et al. define culture as the “patterned processes of people making sense of their world and the conscious and unconscious assumptions, expectations, knowledge, and practices they call on to do so” (Pasick, Burke et al. 2009). The repeated use of the term pattern in the many definitions of culture recognizes that culture is not random. There are consistencies within culture that are flexible and situationally-responsive and as a result, individuals both influence and are influenced by culture.

The idea that culture is situationally-responsive calls for a definition of culture that includes social and environmental factors. Culture is best defined as “the multilevel, multidimensional, biopsychosocial, and ecological system in which a population exists. It is all-encompassing and therefore frames its members’ attitudes toward gender roles, concepts of health and disease, meaning of body parts, and decisions about life, illness, death, religion, and world view” (Kagawa-Singer, Dadia et al. 2010). Under this definition, disease is the result of
an interaction between genetic predisposition, individual action, and social constraints, including lack of resources.

Like culture, agreed-upon definitions for ‘race’ and ‘ethnicity’ are lacking. Race is historically viewed as a biological construct, suggesting that members of the same racial group share common genetic characteristics. However, the validity of race as an indicator of genetic differentiation between groups has been demonstrated to be false (Chaturedi and McKeigue 1994; McKenney and Bennett 1994; Senior and Bhopal 1994; Williams, Lavizzo-Mourey et al. 1994; Beutler, Brown et al. 1996). Greater genetic variation exists within groups than between groups, such that gene frequency is approximately 85% within racial groups and only 15% between racial groups (Freeman 1998). This finding supports the view of race as a social construct based on phenotypic expressions (i.e., skin color) rather than a construct with biological significance (Sheldon and Parker 1992; LaVeist 1994; Senior and Bhopal 1994; Williams, Lavizzo-Mourey et al. 1994; Freeman 1998; Jones 2000).

Race is a function of social, psychological and socio-political forces (Beutler, Brown et al. 1996), and it is within this framework that one needs to understand between-group variations in income, education, adequate housing, and healthcare access. Phenotypic expressions of race result in social interactions that produce racial and ethnic disparities in morbidity and mortality (Freeman 1998). Arguments for the exclusion of racial classification (Collins 2004) ignores the powerful effects of racial discrimination that limit some groups from gaining equal access to valued goods and resources (Williams and Williams-Morris 2000). To say that race has absolutely no biological connection is also incorrect, since certain groups are disproportionately affected by some genetic disorders, such as Tay-Sachs and sickle cell anemia (Burchard, Ziv et al. 2003; Collins 2004). Collins describes the connection between race and health disparities as
“blurry” at best (Collins 2004). This is true if only biologic phenotypes are considered, but the connection is quite clear when used as a socio-political category. Instead of excluding racial classification from research completely, it can be useful for highlighting socially- and politically-constructed racial health disparities, and for generating and exploring hypotheses for root causes of disparities (Burchard, Ziv et al. 2003; Collins 2004; Winker 2004). However, when including race in health behavior research, its definition, operationalization, and the method by which it is measured must be clearly outlined to allow for cross-study comparisons (Winker 2004).

Ethnicity is socially-constructed and refers to the sharing of a common origin and culture (Sheldon and Parker 1992; Chaturedi and McKeigue 1994; LaVeist 1994; Senior and Bhopal 1994; Beutler, Brown et al. 1996; Freeman 1998). While culture is a way of life, ethnicity is an individual’s sense of identity and how that individual is identified by others as a member of a cultural group that lies within a power structure of a multicultural society (Kagawa-Singer 2012). More specifically, one’s ethnicity exists only in the presence of other ethnic groups and it is the way by which individuals are identified by others based on socio-historical context. An individual’s ethnicity is situationally-responsive and can change over time (Burchard, Ziv et al. 2003; Ford and Kelly 2005). Inter-ethnic differences include variations in cultural attitudes and practices, as well as differences in geographic region of residence, neighborhood characteristics, and amount of resources available (Kumanyika 2008). These differences affect health outcomes by influencing health beliefs, the way symptoms are expressed, physical functioning, entry into health service delivery systems, and medical treatment processes (Atkinson, Casas et al. 1992; Marin and Gamba 1996; Williams and Jackson 2000).

The strength of the relationship between ethnicity and health is often reported by level of acculturation (Ford and Kelly 2005). However, acculturation itself is a flawed concept, plagued
by issues relating to conceptualization and measurement (Recio Adrados 1993; Colditz, DeJong et al. 1996). Acculturation is broadly defined as the process that occurs when individuals from one ethnic group come into contact with individuals from another ethnic group (Redfield, Linton et al. 1936). It has also been defined as the process whereby immigrants change their behavior and attitudes toward those of the host society (Rogler, Cortes et al. 1991). This assumes that acculturation is a unidirectional process, where degree of acculturation is measured on a continuum between ethnic and mainstream culture (Gutmann 1999). Recent research expands on this idea and recognizes that acculturation can be bidirectional and multidimensional, such that individuals can possess varying degrees of acculturation depending on the cultural dimension (e.g., diet, health beliefs, religious worldview, etc.) (Zane and Mak 2003). While measurement techniques have become increasingly sophisticated, the concept of acculturation remains poorly understood, yet widely used in health behavior research. Hunt (1996) describes the use of acculturation in research as an ideological “black box” in which unequal healthcare access caused by more material barriers are pushed to the background and culture is made responsible for between-group disparities (Hunt 1996).

While cultural beliefs and their effect on screening are examined in this dissertation, culture is not reduced to discrete variables, but is viewed as an ecologic system and is hereafter considered as individual factors, such as values, beliefs, as well as social and environmental factors that affect access to breast and cervical cancer screening (Kagawa-Singer 2012). As noted above, inter-ethnic differences result in variations in cultural attitudes and practices, geographic region of residence, neighborhood characteristics, and availability of resources. Due to the impact of these factors on healthcare access, the analysis for this study was stratified by ethnic group and geographic location. Because Cambodians and Thais differ significantly with
respect to migration history and demographic profile, stratifying by ethnicity for this study also allows for the comparison of major socio-economic indicators and their effect on cancer screening.
A. Theoretical Overview

Glanz et al. define a theory as a set of interrelated concepts that present a systematic view of events by specifying relationships between variables in order to explain or predict behavior (Glanz, Lewis et al. 1997). Theories are commonly understood to guide research by providing a framework for the analytic approach. Less common is the understanding that theoretical constructs are reformulated and revised when they are not empirically supported, meaning the results from research may lead to modifications of these theories (Aneshensel 2002). That is, theories explain or predict health behavior in a hypothetical world and the accuracy of these explanations and predictions are based on, and adjusted to, real-world observations. Theories cannot be universally applied across all populations, since historical, social and environmental, temporal, and geographic influences create behavior variations for each group and threaten both internal and external validity.

Theoretical frameworks also guide health interventions because interventions based on a theoretical framework are often more successful than those lacking a theoretical foundation; interventions that combine components of more than one theory achieve even greater success (Ammerman, Lindquist et al. 2002; Legler, Meissner et al. 2002; Noar, Benac et al. 2007). However, success can only be achieved with an understanding of how social behavioral theories
and their constructs perform with the population on which the intervention is focused.

Behavioral intention, self-efficacy, perceived susceptibility, perceived benefits, and subjective norms are constructs of several widely used social behavioral theories based on individual cognition (Stewart, Rakowski et al. 2009). While these theories have been commonly used to predict and explain behavior in public health research, their applicability in cancer screening studies involving disadvantaged communities is less well studied.

Traditional social behavioral theories are predominantly based on individual rational decision-making. The Health Belief Model, Theory of Reasoned Action/Planned Behavior, and Transtheoretical Model are among the most widely used theories in health behavior research. In these theories, self-efficacy and behavioral intention are immediate determinants of behavior. In fact, many studies have used intention as the main outcome when actual behavior cannot be measured, including cancer-related studies that involve ethnic minority women (Valdez, Banerjee et al. 2002; Levy-Storms and Wallace 2003; Ham 2005). Missing from these studies is the recognition of barriers that can prevent a woman from being screened, despite having the intention to do so.

Traditional social behavioral theories assert that individuals are ultimately responsible for their behavior change and that social context only influences behavior through individual perception. Social context is defined as socio-cultural forces that shape people’s day-to-day experiences and that both directly and indirectly affect health and behavior (Pasick, Burke et al. 2009). Therefore, health and behavior is a result of the interaction between individuals and their social and physical environment. One effect of this premise is the notion that individuals are able to act on their intentions. If they do not, the fault is their own, and the result is to blame the victim for their disability and disease (McLeroy, Bibeau et al. 1988). This view, however, is not
an accurate depiction of individuals in disadvantaged communities, where health disparities are not just a product of individual factors, but also of limited resources and access to quality healthcare.

Studies on the direct effect of environmental factors on behavior are gaining prominence in public health research and findings are not at all surprising. For example, in their study of breast cancer screening among Asian American women, Pourat et al. found that structural factors to healthcare access explained more variation in screening rates than acculturation alone (Pourat, Kagawa-Singer et al. 2010). This finding suggests that interventions targeting diverse communities must adequately address both individual and environmental barriers to healthcare in order to make significant progress in eliminating health disparities. To recognize the importance of both individual- and environmental-level factors on health behavior, the conceptual framework for this study is comprised of constructs from the Social Ecological Model, the Theory of Reasoned Action/Planned Behavior, and the Transtheoretical Model. Each theory is described in greater detail below.

Social Ecological Models

Unlike individual-level theories, ecological models address the connection between individuals and their environment and recognize the influence of the physical and social environments on health behavior (Sallis, Owen et al. 2008). While ecological models exist across many disciplines, those specific to public health view behavior as influenced by intrapersonal, social and cultural, and physical environment variables (Sallis, Owen et al. 2008). Initial variations of the model have been applied to a broad range of health behaviors, but recent models have more specific uses (Sallis, Owen et al. 2008). The model by McLeroy and
colleagues is perhaps the most widely used in health promotion (McLeroy, Bibeau et al. 1988). In this model, behavioral influences are divided into five levels, including intrapersonal, interpersonal, organizational, community, and societal (Figure 2). According to McLeroy and colleagues, *intrapersonal-level* factors include characteristics of the individual, such as knowledge, attitudes, beliefs, and self-efficacy, as well as the socio-political history of the group(s) that shape these individual-level characteristics. Relationships between family, friends, and co-workers characterize the *interpersonal level*. These relationships influence behavior by acting as positive or negative examples or as social support for the behavior. The organizational, community, and societal levels can be broadly defined as the infrastructure and resources available to facilitate behavior change. The *organizational level* consists of social institutions with organizational characteristics and formal, as well as informal, rules and regulations for operation. The *community level* includes mediating structures or face-to-face primary groups to which individuals belong and the *societal level* are factors that affect health behavior through the larger environmental system, including social norms and policies directed at promoting or restricting behavior.

![Social Ecological Model for Health Promotion](image)

Figure 2. Social Ecological Model for Health Promotion. Source: (McLeroy, Bibeau et al. 1988)
Theory of Reasoned Action/Planned Behavior

The Theory of Reasoned Action (TRA), and later the Theory of Planned Behavior (TPB), explores the influence of beliefs, attitudes, subjective norms on behavior (Montano, Kasprzyk et al. 1997) (Figure 3). The TPB differs from its predecessor because it includes three additional constructs, control beliefs, perceived power, and perceived behavioral control. Combined, all three constructs measure the belief that an individual can control a particular behavior (Ajzen 1991). However, the key construct of both theories is behavioral intention, which is regarded as the most proximal determinant of behavior. As a result, the TRA and TPB have been mainly used to predict behavioral intention, particularly when measuring actual behavior is difficult (Pasick, Barker et al. 2009).

Figure 3. Theory of Reasoned Action/Planned Behavior Models. Source: (Ajzen 1991)
According to the TRA and TPB, an individual’s attitude is shaped by beliefs about the behavior and an evaluation of the outcomes of performing the behavior. Beliefs about social norms and the motivation to adhere to these norms also influence an individual’s subjective norm. This causal chain affects behavioral intention, which in turn is posited to drive an individual to perform the behavior. However, both the TRA and TPB are based on individual perception and neither theory recognizes the direct effects of environmental factors. Social, cultural, and environmental factors are viewed as relevant only insofar as they influence beliefs and attitudes toward the behavior (Pasick and Burke 2008).

**Transtheoretical Model**

The Transtheoretical Model serves as the theoretical framework for the deductive qualitative portion of this study. The Transtheoretical Model combines tenets from major theories across many disciplines to describe the process of behavior change (Prochaska, Redding et al. 1997). It posits that behavior change rarely happens overnight, but rather occurs in a series of stages, from pre-contemplation to maintenance (Figure 4).

![Figure 4. Stages of Change Model. Source: (Prochaska, Redding et al. 1997)](image)

The model also includes constructs such as *processes of change, decisional balance,* and *self-efficacy* to assess an individual’s readiness for change and to identify factors associated with progression to the next stage. *Processes of change* include both the covert and overt activities
that individuals use to progress through the stages of behavior change (Prochaska, Redding et al. 1997). They act as guidelines and are typically used in intervention design, including concepts such as consciousness raising, counter-conditioning, and stimulus control. \textit{Decisional balance} is the act of weighing the risks and benefits of performing the behavior change, where the assumption is that change is more likely to occur if an individual associates more benefits to the behavior. Finally, \textit{self-efficacy} is defined as the confidence an individual has to perform the behavior change. \textit{Self-efficacy} can also be defined as the confidence needed to address barriers in order for the change to occur. The qualitative portion of this dissertation research explores the \textit{decisional balance} and \textit{self-efficacy} constructs in mammogram screening among Cambodian and Thai women in Southern California. More specifically, it explores individual and environmental factors that influence Cambodian and Thai women’s decisions to be screened and the role of self-efficacy in healthcare-seeking behavior.

\section*{B. Conceptual Framework}

This study’s conceptual framework combined major constructs from the Social Ecological Model and the TRA/TPB. Titled “The Social Ecological Model for Studying Breast and Cervical Cancer Screening among Cambodian and Thai Women,” this model incorporated three key features that better conceptualize behavioral factors in diverse communities. As seen in Figure 5, the framework included McLeroy and colleague’s five levels of behavioral influence. This section of the framework conceptualized community-specific factors that influence breast and cervical cancer screening. Variables for this study were selected based on what previous research has found to be significant predictors of cancer screening among Cambodians and Thais, as well as other Asian American subgroups. Variables included in the
quantitative analyses, listed along the far left side of the framework, were categorized into each of the five levels of behavioral influence (intrapersonal, interpersonal, organizational, community, and societal).

The Social Ecological Model is excellent for program planning because it allows for the development of specific strategies to address barriers at each level of behavioral influence. However, the model does not include mechanisms by which these levels influence each other and the dependent variable (i.e., cancer screening). The Social Ecological Model also does not adequately address multiculturalism and the influence of multiple sets of norms in diverse communities. Therefore, the second unique feature of this study’s framework is the addition of a second ellipse to represent a dual set of societal norms to indicate that Cambodian and Thai women’s breast and cervical cancer screening behavior is influenced by both European American and Southeast Asian societal norms. The degree to which these two ellipses overlap demonstrates the amount of influence one or both sets of norms have on an individual’s healthcare decision-making process. It is important to note that the degree of overlap is specific to each individual and will vary according to the specific behavior being studied. For example, the two sets of social norms may overlap greatly for the same individual with regards to cigarette smoking, but may have less overlap for condom use. That would indicate that the individual is influenced equally by Southeast Asian and European American societal norms regarding smoking, but may be more influenced by Southeast Asian societal norms (or European American societal norms) than the other when negotiating condom use.

Adapted constructs from the TRA/TPB were included in the framework to provide a mechanism for which the five levels of behavioral influence affect cancer screening in diverse communities. More specifically, the normative beliefs, motivation to comply, and subjective
norms constructs from the TRA/TPB, along with two additional constructs of community knowledge and Southeast Asian societal norms, were included at each of the five levels of behavioral influence to indicate that health behavior is influenced by the norms at each level of behavioral influence. The two double-headed arrows demonstrate that these levels of behavioral influence can interact and influence one another, thereby modifying the norms associated with that level.

The framework for this study is hypothesized to better describe breast and cervical cancer screening among Cambodian and Thai women by providing the “cultural lens” that is needed to study health behavior in diverse communities. The integration of culture provides the framework for the social determinants of health and recognizes the cultural context in which health behavior occurs. The adapted framework draws upon the collectivistic nature of Asian societies (Triandis 1995) and recognizes that mainstream concepts may not be applicable or valid to communities of color. The juxtaposition of norms at each level of behavioral influence, indicated by solid and dashed boxes in the framework, highlights the incongruity between what is expected of healthcare-seeking behavior in European American and Southeast Asian societies. For example, while European American society promotes patient autonomy, Southeast Asians frequently make health-related decisions together with family members and in fact, decisions are sometimes left to the head of household or adult children (Phungrassami, Sriplung et al. 2003; Kagawa-Singer, Tanjasiri et al. 2009).

It is important to note that culture is often only apparent in studies of diverse communities. However, this study recognizes that culture is all-encompassing and therefore, it is represented by the entire framework, including the European American-dominant cultural views in the U.S.
C. Using Mixed Methods Research to Better Understand Social Context

This dissertation research recognizes that while quantitative methods can identify predictors of breast and cervical cancer, studying culture and its influence on health behavior requires a more comprehensive approach. Therefore, mixed methods is the most appropriate research approach to explore the effects of individual, socio-cultural, and environmental factors on breast and cervical cancer among Cambodian and Thai women.

Deductive vs. Inductive

It is necessary to clearly define deductive and inductive research to avoid erroneous uses of the term mixed methods. A common misconception is that deductive and inductive research differ only in method of data collection and analysis, such that deductive researchers primarily use quantitative approaches and inductive researchers primarily use qualitative approaches. The
The difference between deductive and inductive research lies in the distinct *paradigm* that each follows and the designation of the “expert” perspective. The deductive researcher is assumed to recognize biases by taking an outsider’s, or *etic*, perspective (Douglas 2003). Data is collected with statistically valid and reliable instruments that presumably can be replicated in any study condition and by any researcher using randomly selected, representative samples due to their assumed universal applicability and validity. Conversely, inductive research recognizes that values and context are situational and contribute to a deeper understanding of the behavior from the perspective of the actors themselves. Thus, inductive researchers take an insider’s, or *emic*, perspective and submerse themselves in the study environment to fully understand the behavior and the condition in which it is performed (Douglas 2003).

**Mixed Methods: The Third Methodological Movement**

Mixed methods research is commonly defined as using both qualitative and quantitative approaches to collect and analyze data, interpret findings, and draw inferences in a single study (Tashakkori and Teddlie 2003). However, less common is the understanding that mixed methods research also refers to the use of both paradigms in a single study. This approach mitigates the individual weaknesses of deductive and inductive research by using a combination of both to answer questions that cannot be addressed using any one approach. Understanding breast and cervical cancer screening behavior requires an inductive approach that is free of pre-conceived biases to allow for an in-depth exploration of the interaction between individual and environmental factors. A deductive approach is also needed to recognize differences in migration and resettlement history between Cambodians and Thais and how these differences affect healthcare-seeking behavior in these two groups. Therefore, recognizing the strengths and
weaknesses of each paradigm and using them together in a mixed paradigm/methods approach is the most effective way to study breast and cervical cancer screening in the two seemingly similar, but vastly different communities of Cambodian and Thai Americans. This design approach allows for a more in-depth look at each community in order to compare and contrast significant factors associated with breast and cervical cancer screening. Since health behavior is determined by knowledge and availability of and access to resources (Pasick, Barker et al. 2009), a mixed paradigm/methods approach was used to more accurately assess and estimate the social context that influences breast and cervical cancer screening. Using both research paradigms was necessary to better understand the cancer screening behavior among Cambodian and Thai women.
A. Study Population

Cambodian American History

Between 1975 and 1979, one to three million Cambodians were executed or starved to death, resulting in an almost complete obliteration of the educated class. Many survivors who fled the country experienced further victimization while traveling or at refugee camps, where a lack of adequate food, shelter, and sanitation resulted in sickness and death (Dinh 2009). Cambodian refugees began arriving in the U.S. in 1980 and most were semiliterate or illiterate survivors of the Communist Khmer Rouge rural re-education camps (Kemp 1985). The Cambodian refugee population has endured more trauma than any other collective refugee group (Kemp 1985). More than two decades later, a large number of Cambodians continue to experience high rates of psychiatric disorders as a result of their previous trauma, which included the witnessing of beatings and murders of family members, experiencing near-death starvation, forced labor, and torture (Marshall, Schell et al. 2005). Marshall and colleagues sampled 490 Cambodian refugees in Southern California who suffered during the Khmer Rouge reign and immigrated to the U.S. prior to 1993. They found that over 51% and 62% of individuals reported symptoms of major depression and post-traumatic stress disorder (PTSD), respectively, and 42% of individuals reported symptoms of both disorders (Marshall, Schell et al. 2005). Notably, a large percentage of this sample was also seeing a physician on a regular basis. Despite this staggering magnitude of mental disorders, many Cambodians do not seek treatment for mental
illness due to limited resources, cultural beliefs about mental health, lack of understanding of mental health services, and importantly, limited access to mental healthcare with Khmer-speaking staff (Lee, Lytle et al. 2010). Anecdotally, although Cambodians in Long Beach, California appear to utilize mental health services at a significant rate, this utilization is primarily to renew prescriptions (Marshall, Schell et al. 2005). Due to a lack of clinicians with appropriate language capacities, these individuals do not receive highly skilled counseling.

According to the U.S. Census, California is home to the largest Cambodian American population (Bureau 2010). Cambodians are among the most disadvantaged of all Southeast Asians in terms of income and education (Hoang and Erickson 1982; Muecke 1983; Meinhardt, Tom et al. 1984; Frye 1989; Dinh 2009). Compared to the general population averages in the U.S., a significantly greater proportion of Cambodians live in poverty (22.5% vs. 15.9%), receive public assistance (26.5% vs. 13%), and have less than a high school education (36.0% vs. 14.0%) (Census 2010). Additionally, a large number of Cambodian families are single-parent households led by women who were widowed during the genocide of the Pol Pot era (Dinh 2009). Research shows that Cambodian cultural traits of acceptance and endurance of suffering negatively influence healthcare-seeking behavior (Frye 1989; Frye and D'Avanzo 1994). These cultural traits date back to the Angkor era (9th to 13th Centuries) when individuals were believed to have predetermined and fixed social status and life burdens due to past deeds in their current or previous lives (Ciochon and James 1994). Because one’s fate is not amenable to change, Cambodians spend their entire lives accumulating good merit, in spite of their suffering, in order to ensure a better fate in their next life. Silence in the face of fear and suffering is also a behavior learned at an early age. Although this was a key survival method to escape death by the Khmer Rouge, the cultural norm of managing pain or fear through silence has been
misunderstood and misinterpreted as indifference, passivity, and non-adherence in the U.S. (Frye and D'Avanzo 1994). Moreover, Cambodians’ history of war and torture has led to a general distrust of government and government programs, leaving an even greater divide between the community and health services (Behnia 1997). The first generation of refugees has now reached the age for recommended cancer screenings, but given their history, the circumstances of their immigration, socio-demographic profile, government distrust, and unfamiliarity with Western medicine (Uba 1992), the low rates of screening are not unexpected.

*Thai American History*

Thais share many cultural similarities with Cambodians, but differ in socio-demographic profile and migration history. Thais voluntarily immigrated to the U.S. in three distinct waves from a country at peace (Desbarats 1979). Individuals in the first wave arrived in the U.S. as early as the 1930s and were supported by Thai or U.S. government scholarships. Early immigrants were typically middle-class, educated government employees seeking higher education and who returned home after receiving their advanced degrees. The second wave of migration occurred in the mid- to late-1970s after the Immigration and Nationality Act passed in 1965, which opened the doors to immigrants from Asia, Africa, the Middle East, and Latin countries. A large number of individuals from the second wave had lower levels of education and limited English proficiency. The third, and most recent, immigration wave involved mass migration for family reunification, where the act of migrating became a collective, self-sustaining behavior. Individuals who migrated during the last wave do not have a common set of characteristics and are highly varied in terms of age, gender, and socio-economic status (Desbarats 1979).
Voluntary migration is a selective phenomenon and reasons for migration are known to be associated with certain demographic, economic, social, and psychological characteristics (Desbarats 1979). International migration requires significant capital, since visa applicants must provide evidence of support for the duration of their stay in the U.S. or financial ties with their home country. While visa applications for students are more easily approved, individuals seeking visa approval to visit the U.S. as tourists must have significant monetary assets that serve as motivation to return to their home countries. For this reason, it is not uncommon for individuals with low socio-economic status to borrow money from family and friends to “pad” their bank accounts and then repay their debt once in the U.S. Moreover, many of these individuals overstay their visitor visas, and become undocumented residents. Nevertheless, Thais typically have higher socio-economic status than other subgroups of Southeast Asian Americans who usually arrived as refugees (Desbarats 1979). In the U.S., 69.0% of Thais have a college degree, compared to 38.5% of Cambodians (Census 2010). Thais also have higher levels of median household income than other Southeast Asian subgroups: $62,790 for Thais compared to $46,397 for Cambodians (Census 2010). However, the overall household income figures for Asian Americans, and Southeast Asians in particular, are somewhat deceiving due to multi-generational living practices and the frequency of more than two working adults contributing to the household income. Per capita adult incomes are usually considerably lower than other ethnicities, with the exception of Latinos.

California is home to the largest Thai population outside of Thailand, with a majority residing in Los Angeles County, particularly in East Hollywood, which has been designated as Thai Town due to the proliferation of Thai-owned businesses and shops (Martorell and Morlan 2011). Despite having a strong cultural presence in the U.S. and a better socio-demographic
profile than other Southeast Asians, Thais are still considered an underserved population when compared to Asian Americans overall. Love et al. found that 68.3% of the population surveyed in Los Angeles and Orange County, California were more comfortable speaking only or mostly Thai, and face considerable difficulty when utilizing services available to the general public (Love, Mouttapa et al. 2009). Additionally, limited English fluency is a barrier when seeking employment and forces highly-educated individuals to take jobs for which they are overqualified and underpaid (Desbarats 1979).

B. Data Source

Promoting Access to Health (PATH) for Women

This study utilizes data comes from PATH for Women, a project which was initiated in 1999 as part of the CDC’s REACH 2010 project to eliminate breast and cervical cancer disparities among Southeast Asian and Pacific Islander women (Tanjasiri, Kagawa-Singer et al. 2002). Funded through the CDC and The California Endowment, PATH for Women was a collaboration of seven community-based organizations and two universities to address barriers to breast and cervical cancer screening among Cambodian, Chamorro, Laotian, Samoan, Thai, Tongan, and Vietnamese women in Southern California (Nguyen, Tanjasiri et al. 2008). Program strategies were developed according to findings from a needs assessment survey and interviews with community members, key informants, and providers.

Guided by the Social Ecological Model, the three project goals were to increase breast and cervical cancer knowledge, increase community capacity to provide culturally-appropriate services, and to inform policies that would reduce barriers to cancer care. To meet the three goals, the project sought to address individual and environmental barriers to cancer screening in
Asian American and Pacific Islander (AAPI) communities via a five-pronged approach that included: 1) community education, 2) community training sessions, 3) provider training sessions, 4) breast and cervical cancer screening, and 5) policy advocacy (Tanjasiri, Kagawa-Singer et al. 2002). PATH for Women was among the first projects to recognize the effects of both individual and environmental factors on cancer screening by using the Social Ecological Model as the guiding framework for intervention design. It also viewed culture not as a barrier, but as a tool to strengthen program activities and increase the capacity of ethnic-specific agencies to serve Southeast Asian and Pacific Islander women.

Bilingual and bicultural CHNs were a key component of the PATH for Women project and facilitated all project activities. They served as “cultural brokers” and linked women to available healthcare services in the community. Cancer patient navigators (CPNs) are now becoming a key component in cancer prevention programs targeting underserved individuals. Cancer patient navigators may be professionals (e.g., nurses, social workers), paraprofessionals (e.g., community health workers), or leaders in the community and peers who recognize and may have themselves experienced barriers to healthcare access (e.g., cancer survivors) (Braun, Kagawa-Singer et al. 2012). Regardless of their educational background, CPNs help reduce the magnitude of real and perceived barriers, thereby increasing access so that patients can adhere to cancer care recommendations and improve their cancer outcomes (Braun, Kagawa-Singer et al. 2012).

Quantitative Data

In 2000, baseline data collection was conducted by PATH in four communities: Cambodian, Laotian, Thai, and Tongan. Surveys were administered in both Northern (the
comparison communities) and Southern California. These four communities were selected to complete baseline surveys because limited or no data were available for these population groups. Baseline data for the remaining three groups came from existing data from previous cancer prevention studies. The baseline survey consisted of 91 questions related to the following areas: 1) demographics for each community, 2) health access indicators (e.g., health insurance status, source of medical care, gender and ethnicity of doctor), 3) language access and need for an interpreter, 4) breast and cervical cancer knowledge, attitudes, beliefs, and screening behavior. Survey questions were translated into Cambodian, Laotian, Thai, and Tongan by community partner staff, assessed for cross-cultural comparability, and reviewed for accuracy and appropriateness by community advisory committees prior to administration (see Appendix).

Between 2002 and 2003, trained bilingual interviewers in each community conducted face-to-face or group interviews with women at least 35 years of age. Project staff and community partners determined that places of worship were frequented by many geographically and economically diverse community members. Visiting the places of worship allowed staff to recruit a somewhat representative sample for each ethnic group, including a large number of Cambodian and Thai women at Buddhist temples. Community partner agencies were asked to follow a sampling plan to provide a more stratified sample based on four demographic characteristics: age (35-39, 40-49, 50-59, 60-69, and 70+ years), socioeconomic status (high, medium, and low), language capacity (non-English speaking, bilingual, English only), and income. Based on community size estimations and power analyses, the goal was to reach 180 and 400 Cambodian and Thai women, respectively, in Northern and Southern California. The overall response was 360 (North=180, South=180) for Cambodian women and 742 (North=360, South=382) for Thai women. Follow-up surveys were administered between March and August
2005. From the follow-up surveys, 156 and 194 completed surveys were returned by Cambodian (North=54; South=102) and Thai (North=83; South=111) women, respectively. Due to unforeseen circumstances, however, a large number of follow-up surveys from women in Northern California were lost.

Qualitative Data

Focus group interviews with 110 Southeast Asian women were conducted between December 2007 and September 2008, including 32 Cambodian and 36 Thai women. Women were recruited from a pool of past participants of PATH for Women who had received navigation services and they were purposefully selected from different stages of the cancer care continuum: screening, diagnosis, treatment, recovery, and end-of-life care. Because this study focuses on screening, the qualitative portion only included 24 Cambodian and 18 Thai women who participated in focus group interviews on mammogram utilization. It is important to note that since focus group interviews only included women who received mammograms, questions related to the Pap test were not asked. However, several women mentioned cervical cancer when discussing general health concerns.

All focus group participants were asked about their general breast health needs, knowledge of available resources, navigation services, patient/provider communication needs, and their opinions about the skills needed by CHNs to perform their work effectively. A total of four focus groups were conducted on mammogram utilization (two for Cambodians and two for Thais); each averaged one and a-half hours. All focus group interviews were recorded, transcribed verbatim, and translated into English by trained bilingual and bicultural PATH for Women staff and volunteers. Both quantitative and qualitative phases of the study were
approved by the UCLA Human Subjects Institutional Review Board (#G02-07-107-01), and each participant provided verbal consent prior to the interview.
A. Quantitative Methods

As previously noted, low breast and cervical cancer screening rates among Cambodian and Thai women are due in part to limited disease knowledge, culturally-based norms, and lack of access to healthcare. Low utilization of free cancer screening services, such as the previously mentioned EWC program in California, is evidence of the combined effect of both individual and environmental level factors on screening. It is critical to examine both levels of behavioral influence to gain a better understanding of cancer screening among Cambodian and Thai women, which will be the focus of the quantitative portion of this study:

*Research Questions*

1. What are the individual-, social-, and environmental-level predictors of breast and cervical cancer screening adherence among Cambodian and Thai women in Northern and Southern California?

2. Do inter-regional differences and similarities exist in regard to individual- and environmental-level predictors of breast and cervical cancer screening adherence among Cambodian and Thai women?

3. Is behavioral intention associated with mammogram adherence among Cambodian and Thai women in Southern and Northern California?
Three models were tested to address the three levels of predictors in the first research question. Model 1 included only individual-level predictors: age, length of time in the U.S., educational level, employment status, knowledge about breast and cervical cancer, belief in karma, and health insurance coverage. Model 2 included social- and environmental-level predictors, such as marital status, social support, physician gender, transportation, cost burden, and exposure to breast and cervical cancer information. Results of Models 1 and 2 informed the development of Model 3, which included individual-, social-, and environmental-level predictors. For mammogram adherence, Model 3 included years in the U.S., knowledge about breast and cervical cancer, belief in karma, health insurance, social support, cost burden, and exposure to breast and cervical cancer information. For Pap test adherence, Model 3 included age, educational level, knowledge about breast and cervical cancer, belief in karma, health insurance, marital status, physician gender, transportation needs, and exposure to breast and cervical cancer information.

Dependent Variables

The two dependent variables, or outcomes, for this analysis were mammogram adherence and Pap test adherence. Mammogram adherence was constructed from two questions on the PATH for Women baseline survey: 1) “Have you ever had a mammogram?” and 2) “When was your most recent mammogram?” Women were categorized into one of two categories, “non-adherent” and “adherent.” Those who responded “no” to the first question were categorized as “non-adherent.” Mammogram adherence was determined by responses to the second question. In 2002, the year in which the baseline survey was administered, the recommended screening interval was every one to two years (USPSTF 2002). Therefore, women who indicated that they
received their last mammogram after 2000 were categorized as “adherent” and those who received a mammogram prior to 2000 were categorized as “non-adherent.” Similarly, Pap test adherence was constructed from two questions on the PATH for Women baseline survey: 1) “Have you ever had a Pap test?” and 2) “When was your most recent Pap test?” In 2002, the recommended interval for cervical cancer screening was every three years (USPSTF 2002). As such, women who indicated that they received their most recent Pap test prior to 1999 were categorized as “non-adherent” and those who had a Pap test after 1999 were categorized as “adherent.” Women who responded “no” to the first question were categorized as “non-adherent.” For statistical analysis, the variable “non-adherent” was coded as 0 and “adherent” was coded as 1.

*Independent Variables*

**Intrapersonal Level Variables**

Eight individual-level variables were used in Model 1: age, time in the U.S., knowledge about breast and cervical cancer, belief in karma, educational level, English fluency, employment status, and health insurance status. The following describes the operationalization of each variable.

**Age**

Age was a continuous variable in the PATH for Women baseline survey. However, this study examines age as a categorical variable in order to examine nonlinear associations with the dependent variables. Since the recommendations for mammograms begin at age 40, only women age 40 and above were included in the analysis of mammogram adherence. The age variable was dichotomized as age 40 to 60 (coded as 0) and age 60 and above (coded as 1). Since all
women were included in the analysis of Pap test adherence, the age variable contained three categories: less than age 40 (coded as 0), age 40 to 60 (coded as 1), and age 60 and above (coded as 2).

*Time in the U.S.*

Length of time in the U.S. was operationalized as the overall number of years in the U.S. and was analyzed as a continuous variable. This variable was constructed from one question on the survey: “What year did you come to the United States?” Responses were subtracted from 2002 (the year of data collection) to determine the number of years a woman has lived in the U.S.

*Knowledge*

Knowledge was evaluated as an index score for each woman. This index was the summative score of 29 statements related to breast and cervical cancer etiology, symptoms, and screening (see Table 6). Each statement contained three response categories: disagree, agree, and don’t know. Before summing all 29 responses, all false statements were reverse-coded so that all incorrect responses were coded as 0 and all correct responses were coded as 1. All responses of don’t know were treated as incorrect and re-coded as 0. Therefore, the maximum total score for knowledge was 29, with higher scores indicating more knowledge about breast and cervical cancer.

*Belief in Karma*

The belief that cancer is caused by karma was originally included in the 29-item knowledge measure described above, but it was removed and evaluated separately because karma is a common belief in many Asian cultures. This variable was constructed from a survey item that asked women to agree or disagree with the following statement: “People get breast
cancer because they have lived a bad life.” Women who disagreed with the statement received a score of 0 and those who agreed with the statement received a score of 1. The uncertainty of whether cancer is caused by living a bad life indicates some level of belief in karma, so don’t know responses were also coded as 1. Thus, belief in karma was entered in the model as a dichotomous variable, where 0 represents no belief and 1 represents some belief and strong belief. It is important to note that while this variable was constructed from an item related to breast cancer etiology, it was included in analyses of Pap test adherence because a woman who believes that breast cancer is caused by karma is likely to believe that other types of cancers are caused by karma as well.

Education Level

Level of education was constructed from two questions on the PATH for Women baseline survey: 1) “What levels of education have you completed in the country where you were born?” and 2) “What levels of education have you completed in the U.S.?” Each question contained eight response categories: 1) elementary (grades 1-6), 2) middle school (grades 7-8), 3) high school (grades 9-12), 4) college/university, 5) vocational school, 6) English as a second language (ESL)/ adult school, 7) none, and 8) other. These categories were coded as 1 through 8, respectively. Women who selected the ‘other’ category were asked to specify the level of education received. Several steps were taken to construct the education variable for this study. First, response categories were re-coded to represent a range from low to high education (i.e., none to college/university). Second, open-ended responses in the ‘other’ category were examined and recoded accordingly. For example, “manicurist” and “MBA” were re-coded as vocational school and college/university, respectively. Not all open-ended responses were able to be recoded (e.g., “Not yet, but I plan to take nurse assist. school”) and, therefore remained in
the ‘other’ category. The third step was to create a variable that represented the highest level of education for each woman. This was achieved by taking the highest level of education in either of the two education questions and including it in the new variable. For example, if a woman received a bachelor’s degree in her native country and attended adult school in the U.S., her education level would be coded as college/university, since it is the higher of the two levels. Lastly, due to small sample sizes, the new education variable was collapsed into three categories: 0 for less than high school (i.e., none, other, elementary, and middle school), 1 for ESL/adult school, and 2 for high school and above (i.e., high school, vocational school, and college/university). Since there are no prerequisites for ESL/adult school, individuals without any formal education and those with college degrees can all enroll in classes. As a result, this category could not be combined with the other two categories.

**English Fluency**

English fluency was operationalized as language preference on the PATH for Women baseline survey. The variable had five categories: 1) only English, 2) mostly English, 3) both English & ethnic language equally, 4) mostly ethnic language, and 5) only ethnic language. The variable was then dichotomized to evaluate the effects of limited English fluency on cancer screening. The first category included women who mostly or only spoke their ethnic language (coded as 0) and the second category included women who mostly or only spoke English as well as those who spoke both languages equally (coded as 1).

**Employment Status**

Employment status was a dichotomous variable on the PATH for Women baseline survey and was not re-coded for analysis. Women who were not employed at the time the survey was completed were coded as 0 and those who were employed were coded as 1.
Health Insurance Status

Two different variables for health insurance were constructed for this study, one for Cambodian women and one for Thai women. This was necessary because of significant differences in health insurance coverage between the two groups of women. Both variables for health insurance were constructed from one item on the baseline survey that asked: “What type of health insurance do you have?” This item contained six categories: none, private, Medicare, Medi-Cal, Medicare/Medi-Cal, Medical Service for Indigents [MSI], and other (see Table 3). Due to the large number of Cambodian women with health insurance coverage (92.7%), a majority of whom were covered by public insurance (77.5%), the health insurance categories were collapsed into two groups: 0 for not public (none, private, and other) and 1 for public (Medicare, Medi-Cal, Medicare/Medi-Cal, and MSI). For Thai women, the categories were also collapsed into two groups. However, the first group included women without health insurance coverage (coded as 0) and the second group (coded as 1) included those with health insurance coverage (private, public [Medicare=2.8%; Medi-Cal=2.5%; Medicare/Medi-Cal=3.6%], and other).

Interpersonal Level Variables

This study looked at the effects of two interpersonal-level variables on breast and cervical cancer screening: marital status and social support.

Marital Status

The marital status variable contained six response categories on the baseline survey. These categories included: 1) single, 2) married, 3) divorced, 4) separated, 5) widowed, and 6) living as married. For this study, the categories were dichotomized as 0 (single, divorced,
separated, and widowed) and 1 (married and living as married). This was done for two reasons: cultural beliefs and social support. First, the literature has shown that Cambodian and Thai women commonly believe that Pap tests are only needed for sexually active women. Given that premarital sex is frowned upon in both the Cambodian and Thai cultures, single women may be reluctant to get a Pap test, regardless of sexual activity. Conversely, women who are married or living as married may be more likely to get a Pap test due to the same common belief that only sexually active women need to be screened. Second, women who are married or living as married may receive emotional and instrumental support from their partners (e.g., encouragement, transportation, etc.) and, therefore, are more likely to be screened.

Social Support

Social support was operationalized as having someone to talk to about breast and cervical cancer. This variable was based on a woman’s agreement with the statement: “If I were to need cancer tests or treatment, there are people I could talk to about my feelings and concerns.” Women who disagreed with the statement were coded as 0 for lacking social support and those who agreed with the statement were coded as 1 for having social support.

Organizational Level Variables

There were two organizational-level variables in this study: physician gender and transportation.

Physician Gender

Physician gender was included in this study as a dichotomous variable that was based on one item on the baseline survey: “Is your doctor a man or a woman?” This item originally contained three response categories: 1) man, 2) woman, and 3) both man and woman. Focus
group discussions with Cambodian and Thai women from the PATH for Women project found that Cambodian and Thai women are reluctant to get mammograms and Pap tests from male practitioners. Therefore, the physician gender variable was dichotomized for this study to examine this variable as a facilitator to screening: 0 for male only/both male and female and 1 for female only.

Transportation

Transportation was included as a proxy variable for the availability of language-concordant providers. Due to limited English fluency, it is not uncommon for women to travel long distances to a clinic with medical staff who speak their language. Therefore, the need for transportation to medical appointments indicates a lack of medical clinics with language capacity that are near a woman’s home. For this study, the transportation variable was constructed from an item on the baseline survey that asked women to agree or disagree with the following statement: “You need transportation to appointments.” Women who did not need transportation received a score of 0 and those who needed transportation received a score of 1.

Community Level Variables

Difficulty paying for basic necessities was the only community-level variable in this study.

Cost Burden

While this variable may also be at the intrapersonal level, a woman’s ability to pay for basic necessities, such as food, utilities, and housing, can reveal her socio-economic status and the type of community in which she lives (i.e., inner city, low-income). Cost burden was therefore conceptualized as a community-level variable in this study. Difficulty paying for necessities was measured by a question on the baseline survey that asked women: “How hard is
it for you to pay for the very basis like food, housing, medical care, electricity, and heating?”
Response categories included: 1) very hard, 2) somewhat hard, 3) hard, and 4) not hard at all.
For this study, cost burden was dichotomized to compare not having any difficulty paying for basic necessities versus having at least some difficulty. Therefore, “not hard at all” was coded as 0 and the remaining categories were collapsed and coded as 1.

Societal Level Variables
Exposure to breast and cervical cancer information was the only societal-level variable in this study.

Information Exposure
The information exposure variable was operationalized as the amount of breast and cervical cancer information to which a woman was exposed in the past two years. It was based on responses to the following question: “In the past two years, what sources of information for breast and cervical cancer have you been exposed to?” A list of sources (see Table 5) was provided and women were asked to check all that applied, including educational brochures, newspapers, radio, television, health providers, health educators, community outreach workers, friends, family, and other. Each source of information was given a score of 1 if selected. To construct the information exposure variable, the sources of information were summed into a count variable for each woman and entered into the analysis as a continuous variable.

Behavioral Intention
Due to data limitations, this study examined intention to get a mammogram only.
Mammogram intention was constructed from an item on the baseline survey that asked women to
choose the one statement which best reflected their intent to get a mammogram in the future. The response categories included: 1) I have not even thought about getting a mammogram, 2) I have had a mammogram in the past, but am not thinking about getting another one, 3) I know I need to think about getting one someday, but probably not in the next one to two years, 4) I have not been getting regular mammograms, but I am planning to make the appointment to get one in the next one to two years, and 5) I plan to continue getting mammograms every one to two years. The response categories were dichotomized for this study due to small cell sizes for some of the categories. Having no intention to get a mammogram included categories 1 through 3 (coded as 0) and having intention to get a mammogram included categories 4 and 5 (coded as 1).

**Missing Values**

Missing values were addressed one of two ways, depending on variable type. For continuous variables, such as age and time in the U.S., missing values were replaced with the mean. Rather than using the overall mean, group-specific means were generated due to significant between-group variations in demographic profile among the four groups of women in this study (i.e., Cambodians in Southern and Northern California and Thais in Southern and Northern California). For categorical variables, such as English fluency and physician gender, missing values were replaced with the modal category. When appropriate, responses of don’t know were treated as missing values and replaced with the modal category or for knowledge-related questions, they were grouped with the incorrect answers. For example, if a woman answered “don’t know” when asked about her health insurance status, her response would be treated as a missing value and replaced with the modal category. If a woman answered “don’t know” when asked about risk factors for breast cancer, her response would be treated as an
incorrect answer and recoded as 0. A list of dependent and independent variables and their categories is provided in Table 2.

Table 2. Dependent and Independent Variables Included in the Study

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
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<tr>
<td>Mammogram Adherence</td>
<td>Not adherent (0) Adherent (1)</td>
</tr>
<tr>
<td>Pap test Adherence</td>
<td>No adherent (0) Adherent (1)</td>
</tr>
<tr>
<td><strong>Intrapersonal</strong></td>
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<tr>
<td>Age</td>
<td>continuous</td>
</tr>
<tr>
<td>Time in the U.S.</td>
<td>continuous</td>
</tr>
<tr>
<td>Knowledge</td>
<td>continuous</td>
</tr>
<tr>
<td>Belief in Karma</td>
<td>No (0) Yes (1)</td>
</tr>
<tr>
<td>Education Level</td>
<td>&lt;H.S. (0) ESL/Adult (1) &gt;H.S. (2)</td>
</tr>
<tr>
<td>Employment Status</td>
<td>Not employed (0) Employed (1)</td>
</tr>
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<td>Health Insurance Coverage</td>
<td></td>
</tr>
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<td>Cambodian Thai</td>
<td>Not Public (0) Insured (1)</td>
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<tr>
<td>Thai</td>
<td>Not Insured (0) Public (1)</td>
</tr>
<tr>
<td><strong>Interpersonal</strong></td>
<td></td>
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<tr>
<td>Marital Status</td>
<td>Single, Separated, Divorced, Widowed (0) Married, Living as Married (1)</td>
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<tr>
<td>Social Support</td>
<td>No (0) Yes (1)</td>
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<tr>
<td><strong>Organizational</strong></td>
<td></td>
</tr>
<tr>
<td>Physician Gender</td>
<td>Female only/Both Male and Female (0) Male only (1)</td>
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<tr>
<td><strong>Community</strong></td>
<td></td>
</tr>
<tr>
<td>Need Transportation</td>
<td>No (0) Yes (1)</td>
</tr>
<tr>
<td>Cost Burden</td>
<td>No (0) Yes (1)</td>
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<td><strong>Societal</strong></td>
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<td>Information Exposure</td>
<td>continuous</td>
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<tr>
<td><strong>Behavioral Intention</strong></td>
<td></td>
</tr>
<tr>
<td>Mammogram Intention</td>
<td>No intention (0) Yes intention (1)</td>
</tr>
</tbody>
</table>

**Hypotheses**

Hypotheses for the quantitative portion of this study were developed based on a review of the cancer literature on Cambodian and Thai women and also on preliminary data analyses. It was hypothesized that certain individual, socio-cultural, and environmental variables will be directly associated with mammogram and Pap test adherence.
**Primary Hypothesis:** Individual, socio-cultural, and environmental variables will be directly associated with mammogram and Pap test adherence, such that women who are more likely to be adherent to recommended screening guidelines have the following characteristics at each level of behavioral influence:

**Sub-hypothesis 1:**

*Intrapersonal level*

a. Younger women  
b. Women who have lived in the U.S. for a longer length of time  
c. Women with more knowledge of breast and cervical cancer  
d. Women who do not believe in karma  
e. Women who have higher education levels  
f. Women who speak mostly English or both their ethnic language and English equally  
g. Women who have health insurance coverage (Thai) or public health insurance (Cambodian)  
h. Women who are unemployed  

*Interpersonal level*

i. Women who are married or living as married  
j. Women with someone they can talk to about cancer tests or treatment  

*Organizational level*

k. Women who have a female physician only  
l. Women who have transportation to medical appointments
Community level

m. Women who are able to afford basic necessities

Societal level

n. Women who are exposed to a greater amount of breast and cervical cancer information

Sub-hypothesis 2: Mammogram intention is not associated with mammogram adherence at follow-up for Cambodian and Thai women in Northern and Southern California.

Data Analysis

Quantitative Data Analysis

Univariate, bivariate, and multivariate analyses were performed for this study using SPSS version 19. Univariate analyses were used to check frequencies and missing values. Bivariate analyses were performed to check cell sizes and to check for significant differences in screening status against independent variables. A multivariate logistic regression was performed for each dependent variable to identify significant predictors of mammogram and Pap test adherence for Cambodian and Thai women. A significance level was set at p<.05 for the analyses listed above.

Univariate Analyses

Since this study looked at four groups of women, several univariate analyses were performed. First, a univariate analysis was performed for each ethnic group (Cambodian and Thai) to check frequencies and replace missing values with group means and modal categories to allow for cross-tabulations between women from each region (e.g., Cambodians in Northern
California vs. Cambodians in Southern California). Second, univariate analyses were performed for each of the four groups of women in this study to replace missing values for each group to generate group-specific variables for the final model. Once all missing values had been addressed, response categories were collapsed, when appropriate, and re-coded as indicated in Table 2. Lastly, univariate analyses were performed once more to check frequencies and missing values prior to performing bivariate analyses. Results of univariate analyses are presented in Tables 3, 4, and 5.

**Bivariate Analyses**

Bivariate analyses were performed using two different statistical procedures depending on the type of independent variable. For categorical variables, cross-tabulations of each independent variable were run against each of the dependent variables (mammogram adherence and Pap test adherence). For continuous variables, analyses were performed using linear regression with the independent variable as the dependent variable and mammogram or Pap test adherence as the independent variable. Bivariate analyses were run separately for each of the four groups of women, since addressing missing values with group-specific means and modal categories resulted in independent variables that were specific to each group.

**Multivariate Analyses**

Multivariate logistic regression was performed to identify significant predictors of mammogram adherence and Pap test adherence for Cambodian and Thai women in Northern and Southern California. The analysis was performed twice for each group of women, once for each of the two study outcomes. While performing one analysis for each outcome would have
resulted in a larger sample size, thereby increasing the statistical power, the analyses were
stratified by ethnicity and region to identify predictors of screening specific to each community
and each outcome. This allows for inter-ethnic and inter-regional comparisons of significant
predictors of screening.

Three models were created for this study. Model 1 only includes intrapersonal-level
variables to examine their association with mammogram adherence and Pap test adherence,
independent of variables in the other levels of behavioral influence (i.e., interpersonal,
organizational, community, and societal). Model 2 only includes variables in the interpersonal
through societal level to examine factors outside of the individual (e.g., marital status,
transportation). Model 3 includes variables from all five levels of behavioral influence.
Variables for Model 3 were selected if they were: 1) significant predictor of screening in Models
1 and 2 in this study or 2) identified in the literature as a significant predictor of screening for
Cambodian and Thai women.

In addition to the analyses above, two separate logistic regression analyses were
performed for each group of women to examine the association between intention and
mammogram adherence (Models A and B). More specifically, this study examines whether
having an intention to be screened led to actual screening behavior. Since only follow-up data
can be used to answer this research question, intention was not included in Models 1 or 3
(baseline data only). Model A includes mammogram intention as the only independent variable
and Model B includes mammogram intention and individual- and environmental-level variables
that have been shown to significantly predict cancer screening. These variables include: number
of years in the U.S., knowledge, belief in karma, age, education, English fluency, employment,
health insurance, and transportation. Table 20 presents the adjusted odds ratio for mammogram
adherence at follow-up by intention and individual and environmental level factors for Cambodian women and Table 21 presents the same findings for Thai women. It is important to note that the analyses of intention and follow-up screening had significant sample size limitations due to lost surveys from women in Northern California.

B. Qualitative Methods

The qualitative portion of this study used both inductive and deductive research approaches to answer the research questions. Due to limited knowledge on Cambodian and Thai women in Southern California, using both research approaches allows for an in-depth exploration of the unique characteristics of each group and how they affect breast cancer screening. The inductive portion explores Southeast Asian and European American societal norms related to breast cancer, and how these norms influence cancer screening behavior. The deductive portion examined the decision-making process for each group of women using the decisional balance construct of the Transtheoretical Model as a guide. More specifically, the deductive portion examines individual, social, cultural, and environmental factors that affect a woman’s decision to be screened. Also included in the deductive portion is a comparison of self-efficacy between Cambodian and Thai women, particularly as it relates to healthcare-seeking behavior.

Preliminary analyses of focus group findings indicate that Cambodian and Thai women need significant emotional and instrumental support and therefore may not get screened despite having the intention to do so. Therefore, the qualitative portion of this study also examines the role of CHNs in accessing breast screening services for Cambodian and Thai women in Southern California and how this role differs for each group. Doing so highlights group-specific needs
and underscores the importance of adapting cancer prevention programs to the characteristics of each community.

**Research Questions**

1. How do Southeast Asian social norms and European American social norms influence Cambodian and Thai women’s view of breast cancer and how do these norms affect breast cancer screening? (inductive)

2. How do individual, social, and systems-related factors that influence the decision-making process differ between Cambodian and Thai women in Southern California? (deductive)

3. What role do CHNs play in accessing breast screening services for these women?

**Qualitative Research Approaches**

As noted previously, the qualitative portion of this study used both inductive and deductive research approaches to analyze focus group interview data. The inductive portion uses a grounded theory approach to analyze text, which is an iterative approach that comprises a set of techniques used to identify and analyze text. These techniques include: 1) identifying categories and concepts that emerge from text, 2) developing a conceptual model comprised of the domains identified from the content analysis, and 3) comparing and contrasting the inductive conceptual model and component concepts to formal theories (Bernard 2011). Developed by sociologists Glaser and Strauss, grounded theory is the idea that investigators need to become grounded in the data, thereby allowing understanding to emerge from a close examination of the text (Glaser and Strauss 1967). Grounded theory is centered on identifying themes in the text and coding the text for the presence or absence of those themes, thereby turning text into nominal variables (Bernard
2011). Through coding, the significance of a concept can be determined by the saliency of related themes that emerged from the text. An inductive approach was taken to explore how Southeast Asian social norms and European American societal norms influence Cambodian and Thai women’s view of breast cancer and how these norms affect breast cancer screening.

Preliminary analyses found that Cambodian and Thai women differ significantly with respect to demographic characteristics, such as educational level, employment status, and health insurance coverage. Additionally, Cambodian and Thai women have different migration and resettlement history, resulting in varied life experiences in the U.S., which may also affect cancer screening. Therefore, the deductive portion of this study used content analysis as a confirmatory technique to examine how the decisional balance construct was used in the decision-making process. Content analysis, which is the search for recurring themes (Patton 2002), was used as part of the deductive approach (Bernard 2011) in the qualitative portion of this study to examine individual, social, and systems-related barriers that influence a woman’s decision to be screened and the role of self-efficacy in seeking breast health services among the two groups of women.

**Coding and Thematic Analysis**

Dedoose version 4.5, a software that facilitates qualitative data management, was used for coding and thematic analysis (Lieber 2013). Qualitative data analysis was conducted in several steps. For the inductive approach, transcripts were reviewed to create general codes and then additional codes were added after a discussion with a faculty advisor. Also added were codes related to the costs and benefits of screening and self-efficacy in healthcare-seeking behavior. These codes formed the basis of the deductive portion of the qualitative analysis. All transcripts were coded in Dedoose by one coder, who reviewed each transcript three times to
ensure that coding was performed accurately and consistently. Once coding was complete, graphs were generated using features of the Dedoose software that count the frequency of each code by selected characteristics. Ethnicity/nationality was the only demographic variable used to compare results between groups of women. Lastly, major themes were identified and quotations selected to exemplify the domains of each theme.
CHAPTER SIX: QUANTITATIVE RESULTS

Based on community size estimations, 180 surveys were administered to Cambodian women and 400 surveys were administered to Thai women in each region, for a total of 1,160 surveys. A total of 360 Cambodian women (North=180, South=180) and 743 Thai women (North=360, South=383) completed baseline surveys, for an overall response rate of 95%. Individual-level characteristics for Cambodian and Thai women in Northern and Southern California are presented in Table 3.

A. Results of Univariate Analysis

Individual Level Characteristics

Cambodian

The average age of Cambodian women in this study was 51 years (SD=11.7) (North=49.5 years, SD=11.6; South=52.5 years, SD=11.7) with Cambodian women in Southern California significantly older than their counterparts in Northern California. Average U.S. residency was 17.6 years (SD=5.5) for all Cambodian women. On average, women in Northern California reported living in the U.S. for a slightly longer period of time at 18.2 years (SD=5.3), compared to women in Southern California at 17.0 years (SD=5.6), but this difference was not statistically significant. Despite living in the U.S. for almost 20 years, many Cambodian women in this study still hold traditional beliefs. More than half of Cambodian women overall (54.0%) believed that cancer is caused by living a bad life, or karma. A larger proportion of Cambodian women in the north held such beliefs (58.3%) compared to women in the south (49.4%), but this difference was
not significant. Additionally, no significant differences were observed between Cambodian women in Northern and Southern California with regard to breast and cervical cancer knowledge. However, compared to women in Northern California, significantly more women in Southern California had limited English fluency (73.3% vs. 60.9%) and received less than a high school education (47.8% vs. 27.8%). Almost equal numbers of women in Northern and Southern and Northern California were employed at the time of the study (North=28.3%, South=26.1%). Despite low employment rates, over 90.0% of all Cambodian women in the study had health insurance coverage (North=89.4%, South=96.1%). No significant differences between Cambodian women in Northern and Southern California were observed in regard to health insurance coverage. In Southern California, 85.0% of women had public health insurance (e.g., Medi-Cal, Medi-Care) and 11.1% had private health insurance (e.g., Aetna, Kaiser, Blue Cross, etc.). Among women from Northern California, 70.0% had public health insurance and 17.8% had private health insurance.

Thai

The average age of Thai women in this study was 48.8 years (SD=10.7) and average number of years in the U.S. was 14.3 years (SD=9.4). Thai women in Northern and Southern California differed significantly on many demographic characteristics, including age, number of years in the U.S., breast and cervical cancer knowledge, belief in karma, English fluency, educational level, and health insurance coverage. On average, Thai women in Southern California were significantly older than their Northern California counterparts (South=51.5 years, SD=10.3, North=46.3 years, SD=10.9) and have lived in the U.S. for a greater number of years (South=15.3 years, SD=8.5; North=13.6, SD=10.1). Despite more years in the U.S., women in Southern California reported significantly less English fluency than women in
Northern California. Almost 68.0% of women from Southern California reported speaking mostly or only Thai, while 30.0% of women from Northern California reported the same. In terms of education, 29.8% of women in Southern California received less than high school education, compared to 15.6% of women in Northern California. While almost three-quarters of all Thai women in this study were employed, 48.3% did not have health insurance, with significantly more uninsured Thai women in the south than uninsured women in the north (65.5% vs. 32.2%). Interestingly, Thai women in Southern California were significantly more knowledgeable about breast and cervical cancer than women in the north (36.3% vs. 25.3% with high knowledge). However, significantly more Thai women in the south than in the north (42.0% vs. 28.3%) believed that cancer is caused by living a bad life.

Social and Environmental Characteristics

Social and environmental characteristics for Cambodian and Thai women in Northern and Southern California are presented in Table 4, and exposure to breast and cervical cancer information are presented on Table 5.

Cambodian

Relative to Cambodian women in Northern California, significantly more Cambodian women in the south had difficulty paying for necessities (95.6% vs. 77.2%), had either only a male physician or both male and female physicians (92.2% vs. 59.4%), and needed transportation to medical appointments (50.0% vs. 28.9%). Additionally, significantly more Cambodian women in Southern California reported exposure to breast and cervical cancer information on television (67.8%) compared to Cambodian women in Northern California (18.3%).
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<tr>
<th></th>
<th>CAMBODIAN</th>
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<th></th>
<th>THAI</th>
<th></th>
<th></th>
<th>p</th>
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<td>55 (30.6%)</td>
<td>&lt;.05</td>
<td>34 (9.4%)</td>
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<td>&lt; 10</td>
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<td>24 (13.3%)</td>
<td>.143</td>
<td>166 (46.1%)</td>
<td>103 (26.9%)</td>
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<td>10 to 20</td>
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<td>105 (58.3%)</td>
<td>&lt;.05</td>
<td>102 (28.3%)</td>
<td>179 (46.7%)</td>
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<td>141 (39.2%)</td>
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<td>High</td>
<td>77 (42.8%)</td>
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<td>&lt;.05</td>
<td>91 (25.3%)</td>
<td>139 (36.3%)</td>
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<td>Belief in Karma</td>
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<td>&lt;.05</td>
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<td>Mostly or Only Ethnic</td>
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<td>&lt;.001</td>
<td>108 (30.0%)</td>
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<td>Less than High School</td>
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<td>86 (47.8%)</td>
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<td>114 (29.8%)</td>
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<td>ESL/Adult School</td>
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<td>76 (19.8%)</td>
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<td>High School and above</td>
<td>45 (25.0%)</td>
<td>36 (20.0%)</td>
<td>&lt;.001</td>
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<td>287 (74.9%)</td>
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<td></td>
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<tr>
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<td>7 (3.9%)</td>
<td>&lt;.05</td>
<td>116 (32.2%)</td>
<td>251 (65.5%)</td>
<td>&lt;.001</td>
<td></td>
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<tr>
<td>Public</td>
<td>126 (70.0%)</td>
<td>153 (85.0%)</td>
<td>&lt;.05</td>
<td>26 (7.2%)</td>
<td>40 (10.4%)</td>
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</tr>
<tr>
<td>Private</td>
<td>32 (17.8%)</td>
<td>20 (11.1%)</td>
<td>&lt;.05</td>
<td>208 (57.8%)</td>
<td>91 (23.8%)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Other</td>
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</table>
Table 4. Social and Environmental Characteristics of Cambodia and Thai women in Southern and Northern California, n=1103

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<th></th>
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<th></th>
<th>Thai</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>South (n=180)</td>
<td>North (n=360)</td>
<td>South (n=383)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
<td>n (%)</td>
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<tr>
<td>Marital Status</td>
<td></td>
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<tr>
<td>Single</td>
<td>67 (37.2%)</td>
<td>82 (45.6%)</td>
<td>123 (34.2%)</td>
<td>191 (49.9%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>113 (62.9%)</td>
<td>98 (54.4%)</td>
<td>237 (65.8%)</td>
<td>192 (50.1%)</td>
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<td>Social Support</td>
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<td>8 (4.4%)</td>
<td>10 (5.6%)</td>
<td>11 (3.1%)</td>
<td>16 (4.2%)</td>
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<tr>
<td>Yes</td>
<td>172 (95.6%)</td>
<td>170 (94.4%)</td>
<td>349 (96.9%)</td>
<td>367 (95.8%)</td>
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<td>116 (32.2%)</td>
<td>251 (65.5%)</td>
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<tr>
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<td>126 (70.0%)</td>
<td>153 (85.0%)</td>
<td>26 (7.2%)</td>
<td>40 (10.4%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Private</td>
<td>32 (17.8%)</td>
<td>20 (11.1%)</td>
<td>208 (57.8%)</td>
<td>91 (23.8%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3 (1.7%)</td>
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<td>10 (1.3%)</td>
<td>1 (0.3%)</td>
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<tr>
<td>Difficulty Paying for Necessities</td>
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<td>Not hard at all</td>
<td>41 (22.8%)</td>
<td>8 (4.4%)</td>
<td>272 (75.6%)</td>
<td>247 (64.5%)</td>
<td>&lt;.05</td>
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<tr>
<td>Hard</td>
<td>139 (77.2%)</td>
<td>172 (95.6%)</td>
<td>88 (24.4%)</td>
<td>136 (35.5%)</td>
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<tr>
<td>Need Transportation</td>
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<tr>
<td>No</td>
<td>128 (71.1%)</td>
<td>90 (50.0%)</td>
<td>285 (79.2%)</td>
<td>174 (45.4%)</td>
<td>&lt;.001</td>
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<tr>
<td>Yes</td>
<td>52 (28.9%)</td>
<td>90 (50.0%)</td>
<td>75 (20.8%)</td>
<td>209 (54.6%)</td>
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<td>Physician Gender</td>
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<tr>
<td>Male/Both Male and Female</td>
<td>107 (59.4%)</td>
<td>166 (92.2%)</td>
<td>214 (59.6%)</td>
<td>243 (63.4%)</td>
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<tr>
<td>Female</td>
<td>73 (40.6%)</td>
<td>14 (7.8%)</td>
<td>145 (40.4%)</td>
<td>140 (36.6%)</td>
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Table 5. Source of Breast and Cervical Cancer Information, **Cambodian** and **Thai** women in Northern and Southern California, n=1,103

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<tr>
<th>INFORMATION SOURCE</th>
<th>Cambodian</th>
<th></th>
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<th>Thai</th>
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<td>North (n=360)</td>
<td>South (n=383)</td>
<td>p</td>
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<td>Brochure</td>
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<td>153 (85.0%)</td>
<td>145 (80.6%)</td>
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<td>253 (70.3%)</td>
<td>107 (29.7%)</td>
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<tr>
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<td>27 (15.0%)</td>
<td>35 (19.4%)</td>
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<td>324 (84.6%)</td>
<td>59 (15.4%)</td>
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<td>Newspaper</td>
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<td>170 (94.4%)</td>
<td>.814</td>
<td>266 (73.9%)</td>
<td>94 (26.1%)</td>
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<td>Yes</td>
<td>9 (5.0%)</td>
<td>10 (5.6%)</td>
<td></td>
<td>210 (54.8%)</td>
<td>173 (45.2%)</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Television</td>
<td>No</td>
<td>147 (81.7%)</td>
<td>58 (32.2%)</td>
<td>&lt;.001</td>
<td>214 (59.4%)</td>
<td>148 (40.6%)</td>
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<tr>
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<td>33 (18.3%)</td>
<td>122 (67.8%)</td>
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<td>320 (83.6%)</td>
<td>63 (16.4%)</td>
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<td>Radio</td>
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<td>321 (89.2%)</td>
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<td>7 (3.9%)</td>
<td>11 (6.2%)</td>
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<td>Practitioner</td>
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<td>262 (72.8%)</td>
<td>98 (27.2%)</td>
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<td>327 (85.4%)</td>
<td>56 (14.6%)</td>
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<td>Community Health Worker</td>
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<td>79 (21.9%)</td>
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<td>11 (6.1%)</td>
<td>8 (3.3%)</td>
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<td>333 (86.9%)</td>
<td>50 (13.1%)</td>
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<td>326 (90.6%)</td>
<td>34 (9.4%)</td>
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<td>158 (87.8%)</td>
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<td>320 (83.6%)</td>
<td>63 (16.4%)</td>
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<tr>
<td>Family</td>
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<td>161 (89.4%)</td>
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<td>259 (71.9%)</td>
<td>101 (28.1%)</td>
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<tr>
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<td>36 (20.0%)</td>
<td>19 (10.6%)</td>
<td></td>
<td>359 (93.7%)</td>
<td>24 (6.3%)</td>
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<td>Friends</td>
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<td>100 (55.6%)</td>
<td>.285</td>
<td>168 (46.7%)</td>
<td>192 (53.3%)</td>
</tr>
<tr>
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<td>Yes</td>
<td>70 (38.9%)</td>
<td>80 (44.4%)</td>
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<td>162 (42.3%)</td>
<td>221 (57.7%)</td>
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<tr>
<td>Other</td>
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<td>119 (66.1%)</td>
<td>161 (89.4%)</td>
<td>&lt;.001</td>
<td>275 (76.4%)</td>
<td>85 (23.6%)</td>
</tr>
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<td>Yes</td>
<td>61 (33.9%)</td>
<td>19 (10.6%)</td>
<td></td>
<td>349 (91.1%)</td>
<td>34 (8.9%)</td>
</tr>
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</table>
Conversely, compared to women in the south, significantly larger proportions of Cambodian women in the north received information from practitioners (18.3% vs. 3.9%), family members (20.0% vs. 10.6%), and other sources (33.9% vs. 10.6%).

**Thai**

Compared to Thai women in Northern California, significantly more Thai women in the south were single (49.9% vs. 34.2%) and had a harder time paying for necessities (35.5% vs. 24.4%). Additionally, significantly more Thai women in Southern California needed transportation to medical appointments (54.6%) compared to women in Northern California (20.8%). With regard to exposure to breast and cervical cancer information, Thai women in Northern California and Thai women in Southern California differed significantly on all but one source of information. Compared to Thai women in the south, significantly larger proportions of Thai women in the north received breast and cervical cancer information from brochures (29.7% vs. 15.4%), television (40.6% vs. 16.4%), the radio (10.8% vs. 5.7%), practitioners (27.2% vs. 14.6%), community health workers (21.9% vs. 13.1%), family members (28.1% vs. 6.3%), and other sources (23.6% vs. 8.9%). Among Thai women in Southern California, significantly larger proportions received information from newspapers (45.2%) and health educators (16.4%) compared to women in the north (26.1% and 9.4%, respectively).

**Breast and Cervical Cancer Screening**

The American Cancer Society recommends that average-risk women receive an annual mammogram beginning at age 40 to screen for breast cancer and a Pap test every 3 years beginning at age 21 to screen for cervical cancer (ACS 2011). Despite overwhelming evidence of the benefits of breast and cervical cancer screening, however, adherence among Cambodian
and Thai women in this study was lower than the Healthy People 2000 goal of 70% and 90% for the mammogram and Pap test, respectively. Mammogram and Pap test knowledge, lifetime screening rates, and adherence with recommended screening guidelines among Cambodian and Thai women in this study are presented in Table 6. The univariate results of each variable are presented below, the levels of significance are presented in Tables 3 through 5, and statistical significance of the bivariate results are presented in Tables 8 through 11.

Cambodian

Overall, a large majority of Cambodian women had heard of the mammogram (87.7%) and Pap test (88.9%). Among women in Southern California, 90% had heard of the mammogram and 88.3% had heard of the Pap test, compared to 85.6% and 89.4%, respectively, of women in Northern California. Of those age 40 years and older, 44.9% of women in Southern California and 67.6% of women in Northern California had a mammogram at least once (p<.05) and 38.1% of women in Southern California and 44.1% of women in Northern California reported receiving a mammogram at least once every two years. With regard to cervical cancer screening, 62.8% of women in Southern California and 80.6% of women in Northern California had had a Pap test at least once (p<.001) and 50.9% of women in Southern California and 44.4% of women in Northern California reported receiving a Pap test at least once every two years.

Thai

The majority of Thai women were aware of the mammogram (North=86.1%, South=94.5%; p<.001) and Pap test (North=96.7%, South=98.4%). Among Thai women in Southern California, 76.8% of women age 40 and over had had a mammogram at least once,
Table 6. Breast and Cervical Cancer Screening among Cambodian and Thai Women in Northern and Southern California at Baseline

<table>
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<th>CAMBODIAN (n=360)</th>
<th>THAI (n=743)</th>
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<td></td>
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<td>South (n=180)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>p</td>
</tr>
<tr>
<td>Has heard of a Pap test</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>19 (10.6%)</td>
<td>21 (11.7%)</td>
<td>.434</td>
</tr>
<tr>
<td>Yes</td>
<td>161 (89.4%)</td>
<td>159 (88.3%)</td>
<td></td>
</tr>
<tr>
<td>Has had a Pap test at least once</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>35 (19.4%)</td>
<td>67 (37.2%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Yes</td>
<td>145 (80.6%)</td>
<td>113 (62.8%)</td>
<td></td>
</tr>
<tr>
<td>Has heard of a mammogram</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>26 (14.4%)</td>
<td>18 (10.0%)</td>
<td>.198</td>
</tr>
<tr>
<td>Yes</td>
<td>154 (85.6%)</td>
<td>162 (90.0%)</td>
<td></td>
</tr>
<tr>
<td>Women age 40 years and over, n=886</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>North (n=142)</td>
<td>South (n=143)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>p</td>
</tr>
<tr>
<td>Has had a mammogram at least once</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>46 (32.4%)</td>
<td>76 (53.1%)</td>
<td>&lt;.001</td>
</tr>
<tr>
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<td>96 (67.6%)</td>
<td>67 (46.9%)</td>
<td></td>
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<tr>
<td>Mammogram Intention</td>
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<td>35 (24.6%)</td>
<td>64 (44.8%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Yes</td>
<td>107 (74.7%)</td>
<td>79 (55.2%)</td>
<td></td>
</tr>
</tbody>
</table>
compared to 56.4% of their Northern California counterparts (p<.001). Mammogram adherence was also higher among Thai women in Southern California at 76.3%, compared to 65.1% among women in Northern California (p<.05). With regard to cervical cancer screening, 91.6% of women in Southern California reported receiving a Pap test at least once, compared to 87.2% of women in Northern California who reported the same (p<.05). Of those who ever had a Pap test, 71.8% of women in Southern California and 67.4% of women in Northern California receive a Pap test at least once every two years.

**Breast Cancer Knowledge**

**Symptoms**

Breast and cervical cancer knowledge are presented in Table 7. Overall, Cambodian women had lower knowledge of breast and cervical cancer than did Thai women. Having a lump was correctly identified as a possible symptom of breast cancer by 82.2% of Cambodian women (North=84.4%; South=80%) and 95.6% of Thai women (North=94.2%; South=96.6%). However, fewer Cambodian and Thai women correctly identified that having a bloody discharge (Cambodian: North=22.8%, South=25.6%; Thai North=61.1%, South=70.2%, p<.05), puckered skin (Cambodian: North=12.8%, South=15.6%; Thai: North=44.2%, South=63.2%, p<.001), painful breast (Cambodian: North=30%, South=76.1%, p<.001; Thai: North=81.9%, South=87.2, p<.05%), and changes in size (Cambodian: North=9.4%, South=18.9, p<.05%; Thai: North=78.6%, South=85.6%, p<.05) were also possible symptoms of breast cancer.

**Risk factors**

Most Cambodian and Thai women agreed that a woman has a higher risk of developing breast cancer if her mother or sister has had it (Cambodian: North=58.9%, South=50%; Thai:
North=75%, South=68.7%), but fewer women recognized the risk of eating a high fat diet
(Cambodian: North=25.6%, South=12.8%, p<.05; Thai: North=56.1%, South=55.6%).

Screening

A large majority of women in both groups agreed that a mammogram can find breast
cancer in its early stages (Cambodian: North=77.2%, South=83.9%; Thai: North=79.2%,
South=93.7%, p<.001) and that most women with breast cancer can live a normal life if it is
discovered and treated early (Cambodian: North=88.3%, South=81.1%; Thai: North=95.8%,
South=95.6%). A large majority of both Cambodian and Thai women also agreed that breast
cancer can be cured if found early (Cambodian: North=81.1%, South=79.4%; Thai:
North=95.6%, South=98.7%, p<.05). Yet, most Cambodian women and Thai women also
agreed that a mammogram is only needed when they have symptoms (Cambodian:
North=88.9%, South=85.6%; Thai: North=52.8%, South=90.9%, p<.001). Interestingly, more
Thai women (North=69.7%; South=78.1%, p<.05) than Cambodian women (North=23.9%;
South=27.8%) agreed that there was not much they could do to prevent breast cancer.

Etiology

Most Cambodian and Thai women disagreed that breast cancer is caused by bad winds
(Cambodian: North=67.8%, South=62.2%; Thai: North=88.3%, South=86.4%) or by spirits
(Cambodian: North=84.4%, South=62.8%, p<.001; Thai: North=93.6%, South=92.7%).
However, considerably more Cambodian women agreed that breast cancer can be cured by
traditional healers (North=63.9%; South=73.9%, p<.05) than Thai women (North=44.4%;
South=34.2%, p<.05). Slightly more Cambodian women than Thai women agreed that trauma to
the breasts causes cancer (Cambodian: North=75.6%, South=73.3%; Thai: North=69.4%,
South=71.3%).
Table 7. Knowledge about Breast and Cervical Cancer, Cambodian and Thai Women in Northern and Southern California, n=1,103 (Table continues)

<table>
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<th></th>
<th><strong>Cambodian</strong></th>
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</thead>
<tbody>
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<td></td>
<td><strong>North</strong> (n=180)</td>
<td><strong>South</strong> (n=180)</td>
</tr>
<tr>
<td><strong>Which of the following are possible signs or symptoms of breast cancer?</strong></td>
<td></td>
<td></td>
</tr>
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<td>Breast Lump</td>
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<td>144 (80.0%)</td>
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<td>Bloody discharge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>139 (77.2%)</td>
<td>134 (74.4%)</td>
</tr>
<tr>
<td>Yes</td>
<td>41 (22.8%)</td>
<td>46 (25.6%)</td>
</tr>
<tr>
<td>Pucker skin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>157 (87.2%)</td>
<td>152 (84.4%)</td>
</tr>
<tr>
<td>Yes</td>
<td>23 (12.8%)</td>
<td>28 (15.6%)</td>
</tr>
<tr>
<td>Painful breasts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>126 (70.0%)</td>
<td>43 (23.9%)</td>
</tr>
<tr>
<td>Yes</td>
<td>54 (30.0%)</td>
<td>137 (76.1%)</td>
</tr>
<tr>
<td>Changes in size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>163 (90.6%)</td>
<td>146 (81.1%)</td>
</tr>
<tr>
<td>Yes</td>
<td>17 (9.4%)</td>
<td>34 (18.9%)</td>
</tr>
<tr>
<td>A woman is more likely to get breast cancer if her mother or sister has had it.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>74 (41.1%)</td>
<td>90 (50.0%)</td>
</tr>
<tr>
<td>Agree</td>
<td>106 (58.9%)</td>
<td>90 (50.0%)</td>
</tr>
<tr>
<td>A woman is more likely to get breast cancer if she eats a diet high in fat.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>134 (74.4%)</td>
<td>157 (87.2%)</td>
</tr>
<tr>
<td>Agree</td>
<td>46 (25.6%)</td>
<td>23 (12.8%)</td>
</tr>
<tr>
<td>A mammogram can find breast cancer in its early stages.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>41 (22.8%)</td>
<td>29 (16.1%)</td>
</tr>
<tr>
<td>Agree</td>
<td>139 (77.2%)</td>
<td>151 (83.9%)</td>
</tr>
<tr>
<td>Most women with breast cancer can live a normal lifetime if it is discovered and treated early.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>21 (11.7%)</td>
<td>34 (18.9%)</td>
</tr>
<tr>
<td>Agree</td>
<td>159 (88.3%)</td>
<td>146 (81.1%)</td>
</tr>
<tr>
<td>A mammogram is only needed if I have symptoms.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>20 (11.1%)</td>
<td>26 (14.4%)</td>
</tr>
<tr>
<td>Agree</td>
<td>160 (88.9%)</td>
<td>154 (85.6%)</td>
</tr>
<tr>
<td>There is not much I can do to prevent breast cancer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>137 (76.1%)</td>
<td>130 (72.2%)</td>
</tr>
<tr>
<td>Agree</td>
<td>43 (23.9%)</td>
<td>50 (27.8%)</td>
</tr>
<tr>
<td>I need a mammogram only when I have a breast lump.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>72 (40.0%)</td>
<td>38 (21.1%)</td>
</tr>
<tr>
<td>Agree</td>
<td>108 (60.0%)</td>
<td>142 (78.9%)</td>
</tr>
<tr>
<td>I am very likely to get breast cancer in my lifetime.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>171 (95.0%)</td>
<td>169 (93.9%)</td>
</tr>
<tr>
<td>Agree</td>
<td>9 (5.0%)</td>
<td>11 (6.1%)</td>
</tr>
<tr>
<td>If breast cancer is found early, it can be cured.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>34 (18.9%)</td>
<td>37 (20.6%)</td>
</tr>
<tr>
<td>Agree</td>
<td>146 (81.1%)</td>
<td>143 (79.4%)</td>
</tr>
<tr>
<td>Trauma to the breast(s) causes cancer.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>44 (24.4%)</td>
<td>48 (26.7%)</td>
</tr>
<tr>
<td>Agree</td>
<td>136 (75.6%)</td>
<td>132 (73.3%)</td>
</tr>
</tbody>
</table>
Table 7 (Continued). Knowledge about Breast and Cervical Cancer, Cambodian and Thai Women in Northern and Southern California, n=1,103

<table>
<thead>
<tr>
<th></th>
<th>Cambodian</th>
<th>Thai</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>North (n=180)</td>
<td>South (n=180)</td>
</tr>
<tr>
<td>Breast cancer is caused by bad winds.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>122 (67.8%)</td>
<td>112 (62.2%)</td>
</tr>
<tr>
<td>Agree</td>
<td>58 (32.2%)</td>
<td>68 (37.8%)</td>
</tr>
<tr>
<td>Breast cancer is caused by (bad) spirits.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>152 (84.4%)</td>
<td>113 (62.8%)</td>
</tr>
<tr>
<td>Agree</td>
<td>28 (15.6%)</td>
<td>67 (37.2%)</td>
</tr>
<tr>
<td>Breast cancer can be cured by traditional healers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>65 (36.1%)</td>
<td>47 (26.1%)</td>
</tr>
<tr>
<td>Agree</td>
<td>115 (63.9%)</td>
<td>133 (73.9%)</td>
</tr>
<tr>
<td>If cancer of the cervix is found early, it can be cured.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>31 (17.2%)</td>
<td>28 (15.6%)</td>
</tr>
<tr>
<td>Agree</td>
<td>149 (82.8%)</td>
<td>152 (84.4%)</td>
</tr>
<tr>
<td>A woman is more likely to get cancer of the cervix if she began having sex at an early age.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>93 (51.7%)</td>
<td>116 (64.4%)</td>
</tr>
<tr>
<td>Agree</td>
<td>87 (48.3%)</td>
<td>64 (35.6%)</td>
</tr>
<tr>
<td>A woman is more likely to get cancer of the cervix if she has had many sexual partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>62 (34.4%)</td>
<td>54 (30.0%)</td>
</tr>
<tr>
<td>Agree</td>
<td>118 (65.6%)</td>
<td>126 (70.0%)</td>
</tr>
<tr>
<td>A woman is more likely to get cancer of the cervix if her husband has had many sexual partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>70 (38.9%)</td>
<td>58 (32.2%)</td>
</tr>
<tr>
<td>Agree</td>
<td>110 (61.1%)</td>
<td>122 (67.8%)</td>
</tr>
<tr>
<td>A woman is more likely to get cancer of the cervix if she is exposed to cigarette smoke.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>127 (70.6%)</td>
<td>142 (78.9%)</td>
</tr>
<tr>
<td>Agree</td>
<td>53 (29.4%)</td>
<td>38 (21.1%)</td>
</tr>
<tr>
<td>A woman is more likely to get cancer of the cervix if she has poor hygiene.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>60 (33.3%)</td>
<td>56 (31.1%)</td>
</tr>
<tr>
<td>Agree</td>
<td>120 (66.7%)</td>
<td>124 (68.9%)</td>
</tr>
<tr>
<td>A woman is more likely to get cancer of the cervix if she uses an intrauterine device (IUD).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>77 (42.8%)</td>
<td>115 (63.9%)</td>
</tr>
<tr>
<td>Agree</td>
<td>103 (57.2%)</td>
<td>65 (36.1%)</td>
</tr>
<tr>
<td>A woman is more likely to get cancer of the cervix if she uses birth control pills.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>95 (52.8%)</td>
<td>134 (74.4%)</td>
</tr>
<tr>
<td>Agree</td>
<td>85 (47.2%)</td>
<td>46 (25.6%)</td>
</tr>
<tr>
<td>A woman does not need to get Pap smears after she reaches menopause.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>78 (43.3%)</td>
<td>67 (37.2%)</td>
</tr>
<tr>
<td>Agree</td>
<td>102 (56.7%)</td>
<td>113 (62.8%)</td>
</tr>
<tr>
<td>A woman does not need to get Pap smears after she stops having children.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>131 (72.8%)</td>
<td>121 (67.2%)</td>
</tr>
<tr>
<td>Agree</td>
<td>49 (27.2%)</td>
<td>59 (32.8%)</td>
</tr>
<tr>
<td>Only women who are sexually active should get Pap smears.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>116 (64.4%)</td>
<td>75 (41.7%)</td>
</tr>
<tr>
<td>Agree</td>
<td>64 (35.6%)</td>
<td>105 (58.3%)</td>
</tr>
</tbody>
</table>
Cervical Cancer Knowledge

Risk factors

The majority of Cambodian and Thai women agreed that having many sexual partners increases risk of cervical cancer (Cambodian: North=65.6%, South=70%; Thai: North=61.7%, South=77.3%, p<.001), and that the number of sexual partners the husband has had increases risk (Cambodian: North=61.1%, South=67.8%; Thai: North=50.8%, South=75.7%, p<.001). However, fewer women were aware of an increased risk of cervical cancer associated with cigarette smoking (Cambodian: North=29.4%, South=21.1%; Thai: North=30.6%, South=33.2%), use of birth control pills (Cambodian: North=47.2%, South=25.6%, p<.001; Thai: North=23.6%, South=31.3%, p<.05), and intrauterine devices (IUD) (Cambodian: North=57.2%, South=36.1%, p<.001; Thai: North=34.4%, South=50.9%, p<.001). Few Cambodian women than Thai women agreed that poor hygiene is a risk factor for cervical cancer (Cambodian: North=66.7%, South=68.9%; Thai: North=76.7%, South=85.6%, p<.05).

Screening

Despite low cervical cancer screening rates among Cambodian and Thai women, the majority of both groups of women agreed that cervical cancer can be cured if found early (Cambodian: North=80.4%, South=82.8%; Thai: North=94.2%, South=95.1%). However, Cambodian women were less knowledgeable about screening guidelines than Thai women. Fewer Cambodian women (North=43.3%; South=37.2%) than Thai women (North=96.4%; South=93%, p<.05) were aware that a woman should continue with screening even if she reaches menopause or stops having children (Cambodian: North=27.2%, South=32.8%; Thai: North=6.1%, South=10.4%, p<.05). Notably, significantly more Cambodian women
(North=35.6%; South=58.3%, p<.001) than Thai women (North=11.9%; South=8.4%) agreed that a woman only needs a Pap test if she is sexually active.

**B. Results of Bivariate Analysis**

Bivariate analyses examined differences between adherent and non-adherent women with regard to individual, social, and environmental factors. Separate analyses were performed for mammogram adherence and Pap test adherence and for each of the four groups of women. Stratifying by group and cancer screening allowed for the identification of factors that are associated with a specific group and type of screening. Results of the bivariate analyses for mammogram adherence are presented in Table 8 and 9. Significant variation of indicators were found between the two ethnic groups and within ethnic groups by geographic region.

*Mammogram Adherence*

**Individual Level Factors**

**Cambodian**

In Northern California, a significantly larger proportion of adherent women reported a greater number of years in the U.S. compared to non-adherent women (20.3 years and 17.8 years, p<.05). Additionally, a larger proportion of adherent women in the north had higher intention to be screened (94.2%, p<.001) compared to non-adherent women (57.6%). Among Cambodian women in Southern California, significantly less adherent women (17.6%, p<.05) believed that cancer is caused by living a bad life compared to non-adherent women (39.8%), and significantly more adherent women had higher intention to be screened (90.2%, p<.001) than non-adherent
women (33.7%). On average, adherent women scored significantly higher on the breast and cervical cancer knowledge index than non-adherent women (14.5 compared to 12.0, \(p<.001\)).

Table 8. Bivariate Results for Mammogram Adherence, Cambodian Women age 40 and over, n=252

<table>
<thead>
<tr>
<th>CATEGORICAL VARIABLES</th>
<th>CAMBODIAN North (n=118)</th>
<th>CAMBODIAN South (n=134)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-adherent</td>
<td>Adherent</td>
</tr>
<tr>
<td>Age &gt;60</td>
<td>15 (22.7%) ref</td>
<td>11 (21.2%)</td>
</tr>
<tr>
<td>Belief in Karma Cancer is caused by living a bad life</td>
<td>34 (51.5%) ref</td>
<td>34 (65.4%)</td>
</tr>
<tr>
<td>Education ESL/Adult School</td>
<td>30 (45.5%) ref</td>
<td>28 (53.8%)</td>
</tr>
<tr>
<td></td>
<td>15 (22.7%) ref</td>
<td>8 (15.4%)</td>
</tr>
<tr>
<td>Language Preference Mostly or only English/Both Equally</td>
<td>29 (43.9%) ref</td>
<td>23 (44.2%)</td>
</tr>
<tr>
<td>Employment Status Employed</td>
<td>17 (25.8%) ref</td>
<td>14 (26.9%)</td>
</tr>
<tr>
<td>Health Insurance Type Public Insurance</td>
<td>58 (87.9%) ref</td>
<td>40 (76.9%)</td>
</tr>
<tr>
<td>Marital Status Married/Living as Married</td>
<td>40 (60.6%) ref</td>
<td>34 (65.4%)</td>
</tr>
<tr>
<td>Social Support Have someone to talk about cancer</td>
<td>63 (95.5%) ref</td>
<td>50 (96.2%)</td>
</tr>
<tr>
<td>Transportation Need transportation to medical visits</td>
<td>18 (27.3%) ref</td>
<td>16 (30.8%)</td>
</tr>
<tr>
<td>Physician Gender Female only physician</td>
<td>20 (30.3%) ref</td>
<td>25 (48.1%)</td>
</tr>
<tr>
<td>Cost Burden Have difficulty paying for necessities</td>
<td>52 (78.8%) ref</td>
<td>31 (59.6%)</td>
</tr>
<tr>
<td>Intention Intention to get a mammogram</td>
<td>38 (57.6%) ref</td>
<td>49 (94.2%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CONTINUOUS VARIABLES</th>
<th>Mean±SD</th>
<th>Mean±SD</th>
<th>Mean±SD</th>
<th>Mean±SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge(^a)</td>
<td>13.6±3.1 ref</td>
<td>14.4±3.3</td>
<td>12±3.3 ref</td>
<td>14.5±4.0 **</td>
</tr>
<tr>
<td>Years in the U.S.</td>
<td>17.8±5.6 ref</td>
<td>20.3±3.9</td>
<td>15.9±6.3 ref</td>
<td>17.4±4.1</td>
</tr>
<tr>
<td>Information Exposure(^b)</td>
<td>1.5±1.4 ref</td>
<td>1.3±1.4</td>
<td>2.6±1.0 ref</td>
<td>2.6±1.0</td>
</tr>
</tbody>
</table>

\(SD=\)Standard Deviation  
\(ref=\)Non-adherent women are the reference group  
\(*p<.05, **p<.001\)

\(^a\) Knowledge was included as an index score, ranging from 1 to 29, with 29 indicating high knowledge of breast and cervical cancer.

\(^b\) Information Exposure was included as an index score representing the number of sources of breast and cervical cancer information to which a woman has been exposed. The score ranged from 1 to 10.
Table 9. Bivariate Results for Mammogram Adherence, Thai Women age 40 and over, n=560

<table>
<thead>
<tr>
<th>CATEGORICAL VARIABLES</th>
<th>North (n=235)</th>
<th></th>
<th>South (n=325)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-adherent</td>
<td>Adherent</td>
<td>Non-adherent</td>
<td>Adherent</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;60</td>
<td>9 (11.0%)</td>
<td>23 (15.0%)</td>
<td>14 (18.2%)</td>
<td>47 (19.0%)</td>
</tr>
<tr>
<td>Belief in Karma</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer is caused by living a bad life</td>
<td>17 (20.7%)</td>
<td>45 (29.4%)</td>
<td>31 (40.3%)</td>
<td>111 (44.8%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESL/Adult School</td>
<td>33 (40.2%)</td>
<td>52 (34.0%)</td>
<td>9 (11.7%)</td>
<td>56 (22.6%)</td>
</tr>
<tr>
<td>High School and Above</td>
<td>41 (50.0%)</td>
<td>92 (60.1%)</td>
<td>38 (49.4%)</td>
<td>121 (48.8%)</td>
</tr>
<tr>
<td>Language Preference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostly or only English/Both Equally</td>
<td>41 (50.0%)</td>
<td>116 (75.8%)</td>
<td>17 (22.1%)</td>
<td>87 (35.1%)</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>67 (81.7%)</td>
<td>111 (72.5%)</td>
<td>55 (71.4%)</td>
<td>184 (74.2%)</td>
</tr>
<tr>
<td>Health Insurance Coverage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insured</td>
<td>36 (43.9%)</td>
<td>121 (79.1%)</td>
<td>15 (19.5%)</td>
<td>99 (39.9%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>53 (64.6%)</td>
<td>106 (69.3%)</td>
<td>31 (40.3%)</td>
<td>126 (50.8%)</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have someone to talk to about cancer</td>
<td>81 (98.8%)</td>
<td>147 (96.1%)</td>
<td>71 (92.2%)</td>
<td>242 (97.6%)</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need transportation to medical visits</td>
<td>21 (25.6%)</td>
<td>30 (19.6%)</td>
<td>47 (61.0%)</td>
<td>138 (55.6%)</td>
</tr>
<tr>
<td>Physician Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female only physician</td>
<td>37 (45.1%)</td>
<td>76 (49.7%)</td>
<td>34 (44.2%)</td>
<td>114 (46.0%)</td>
</tr>
<tr>
<td>Cost Burden</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have difficulty paying for necessities</td>
<td>25 (30.5%)</td>
<td>26 (17.0%)</td>
<td>25 (32.5%)</td>
<td>96 (38.7%)</td>
</tr>
<tr>
<td>Intention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to get a mammogram</td>
<td>46 (56.1%)</td>
<td>147 (96.1%)</td>
<td>59 (76.6%)</td>
<td>247 (99.6%)</td>
</tr>
<tr>
<td>CONTINUOUS VARIABLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>16.7±3.3</td>
<td>17.7±3.3*</td>
<td>17.1±3.6</td>
<td>18.3±3.0*</td>
</tr>
<tr>
<td>Years in the U.S.</td>
<td>10.7±9.3</td>
<td>18.9±9.8**</td>
<td>12.9±8.2</td>
<td>17.0±8.3**</td>
</tr>
<tr>
<td>Information Exposure</td>
<td>1.7±1.7</td>
<td>2.8±2.4*</td>
<td>1.8±1.3</td>
<td>2.0±1.4</td>
</tr>
</tbody>
</table>

SD=Standard Deviation
ref=Non-adherent women are the reference group
*p<.05, **p<.001

Knowledge was included as an index score, ranging from 1 to 29, with 29 indicating high knowledge of breast and cervical cancer.

Information Exposure was included as an index score representing the number of sources of breast and cervical cancer information to which a woman has been exposed. The score ranged from 1 to 10.
Thai

In Northern California, significantly more adherent women were fluent in English (75.8%, \( p < .001 \)) and had health insurance (79.1%, \( p < .001 \)) than non-adherent women (50.0% and 43.9%, respectively). On average, adherent Thai women in Northern California scored higher on the breast and cervical cancer knowledge index (17.7, \( p < .05 \)) and reported a greater number of years in the U.S. (18.9, \( p < .001 \)) compared to non-adherent women (16.7 and 10.7, respectively). Similarly, significantly larger proportions of adherent Thai women in Southern California were fluent in English (35.1%, \( p < .05 \)) and had health insurance (39.9%, \( p < .05 \)) compared to non-adherent women (22.1% and 19.5%, respectively). On average, adherent women scored higher on the knowledge index (17.7, \( p < .05 \)), lived in the U.S longer (18.9, \( p < .001 \)), and were exposed to a greater number of breast and cervical cancer information sources (2.8, \( p < .05 \)) compared to non-adherent women (16.7, 10.7, and 1.7, respectively).

Social- and Environmental-Level Factors

Cambodian

In Northern California, adherent women significantly differed from non-adherent women with regard to physician gender, cost burden, intention, and years in the U.S. A significantly larger proportion of adherent women had a female only physician (48.1%, \( p < .05 \)) than non-adherent women (30.2%). A significantly lower proportion of adherent women had difficulty paying for basic necessities (59.6%, \( p < .05 \)) compared to non-adherent women (78.8%).

Thai

In Northern California, significantly less adherent women had difficulty paying for basic necessities (17.0%, \( p < .05 \)) than non-adherent women (30.5%). A significantly larger proportion
of adherent Thai women in Southern California had someone to talk to about cancer tests and
treatment (97.6%, \( p < .05 \)) compared to non-adherent women (92.2%).

_Pap Test Adherence_

*Individual-Level Factors*

Tables 10 and 11 present results of the bivariate analyses of Pap test adherence for
Cambodian and Thai women in Northern and Southern California.

_Cambodian_

In Northern California, a significantly larger proportion of adherent women were between
the ages of 40 and 60 years (63.9%, \( p < .05 \)) compared to non-adherent women (57.8%).
Concurrently, a significantly lower proportion of adherent women were older than age 60
(21.3%, \( p < .05 \)) compared to non-adherent women (24.4%). A significantly larger proportion of
adherent Cambodian women in Northern California reported higher intention to be screened
(93.1%, \( p < .001 \)) compared to non-adherent women (62.2%). Age also differed among
Cambodian women in Southern California, such that a significantly larger proportion of adherent
women were between the ages of 40 and 60 years (51.7%, \( p < .05 \)) compared to non-adherent
women in the same age category (46.5%), and significantly less adherent women were older than
age 60 years (21.3%, \( p < .05 \)) compared to non-adherent women (40.7%). Significantly larger
proportions of adherent Cambodian women in Southern California believed that cancer is caused
by living a bad life (61.8%, \( p < .05 \)), completed high school or higher (27.0%, \( p < .05 \)), were
employed (36.0%, \( p < .05 \)), and had higher intention to be screened (86.5%, \( p < .001 \)) compared to
non-adherent women (34.9%, 11.6%, 17.4%, and 47.7%, respectively). Interestingly, a
significantly smaller proportion of adherent Cambodian women in Southern California had
public health insurance (78.7%, \( p < .05 \)) compared to non-adherent women (90.7%). On average,
adherent Cambodian women in Southern California scored higher on the breast and cervical cancer knowledge index (14.6, \(p<.001\)) and reported a greater number of years in the U.S. (18.0, \(p<.05\)) compared to non-adherent women (12.0 and 15.9, respectively).

**Thai**

Significantly larger proportions of adherent Thai women in Northern California were fluent in English (78.0%, \(p<.001\)) and had health insurance coverage (80.1%, \(p<.001\)) compared to non-adherent women. Additionally, adherent Thai women in the north scored higher on the breast and cervical cancer index (17.7, \(p<.05\)) and reported a greater number of years in the U.S. (15.5, \(p<.001\)) compared to non-adherent women (16.5 and 9.8, respectively). Among Thai women in Southern California, significantly larger proportions of adherent women were between the ages of 40 and 60 years (80.5%, \(p<.05\)), completed ESL/Adult school classes (23.6%, \(p<.05\)), and were employed (78.7%, \(p<.05\)) compared to non-adherent women (53.3%, 11.4%, and 63.8%, respectively). Adherent Thai women in the south also scored significantly higher on the breast and cervical cancer knowledge index (18.3, \(p<.05\)) compared to non-adherent women (17.4) with a maximum score of 29.

**Social- and Environmental-Level Factors**

**Cambodian**

Interestingly, adherent Cambodian women in Northern California reported significantly fewer sources of breast and cervical cancer information (1.1, \(p<.05\)) to which they have been exposed compared to non-adherent women (1.6). Among Cambodian women in Southern California, a significantly larger proportion of adherent women had a female only physician (13.5%, \(p<.05\)) compared to non-adherent women (2.3%).

89
Thai

In Northern California, a significantly smaller proportion of adherent women needed transportation to medical appointments (15.7%, \( p<.05 \)) compared to non-adherent women (29.8%). Similarly, a significantly smaller proportion of adherent women in Southern California needed transportation to medical appointments (50.9%, \( p<.05 \)) compared to non-adherent (63.8%). Additionally, adherent Thai women in the north (2.8, \( p<.001 \)) and south (2.1, \( p<.05 \)) reported a significantly higher number of sources of breast and cervical cancer information to which they have been exposed, compared to their non-adherent counterparts (north=1.7, south=1.7).
Table 10. Bivariate Results for Pap test Adherence, Cambodian Women age 18 and over, n=337

<table>
<thead>
<tr>
<th>CATEGORICAL VARIABLES</th>
<th>CAMBODIAN North (n=162)</th>
<th>CAMBODIAN South (n=175)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-adherent n (%)</td>
<td>Adherent n (%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-60</td>
<td>52 (57.8%) ref</td>
<td>46 (63.9%)*</td>
</tr>
<tr>
<td>&gt;60</td>
<td>22 (24.4%) ref</td>
<td>7 (9.7%)*</td>
</tr>
<tr>
<td>Belief in Karma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer is caused by living a bad life</td>
<td>48 (53.3%) ref</td>
<td>45 (62.5%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESL/Adult School</td>
<td>42 (46.7%) ref</td>
<td>36 (50.0%)</td>
</tr>
<tr>
<td>High School and Above</td>
<td>23 (25.6%) ref</td>
<td>16 (22.2%)</td>
</tr>
<tr>
<td>Language Preference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostly or only English/Both Equally</td>
<td>42 (46.7%) ref</td>
<td>40 (55.6%)</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>23 (25.6%) ref</td>
<td>22 (30.6%)</td>
</tr>
<tr>
<td>Health Insurance Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Insurance</td>
<td>76 (84.4%) ref</td>
<td>55 (76.4%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>60 (66.7%) ref</td>
<td>31 (58.3%)</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have someone to talk to about cancer</td>
<td>85 (94.4%) ref</td>
<td>69 (95.8%)</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need transportation to medical visits</td>
<td>26 (28.9%) ref</td>
<td>17 (23.6%)</td>
</tr>
<tr>
<td>Physician Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female only physician</td>
<td>33 (36.7%) ref</td>
<td>31 (43.1%)</td>
</tr>
<tr>
<td>Cost Burden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have difficulty paying for necessities</td>
<td>72 (80.0%)</td>
<td>52 (72.2%)</td>
</tr>
<tr>
<td>Intention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to get a Pap test</td>
<td>56 (62.2%) ref</td>
<td>67 (93.1%)**</td>
</tr>
<tr>
<td>CONTINUOUS VARIABLES</td>
<td>Mean±SD</td>
<td>Mean±SD</td>
</tr>
<tr>
<td>Knowledge</td>
<td>13.6±3.4 ref</td>
<td>14.2±2.9</td>
</tr>
<tr>
<td>Years in the U.S.</td>
<td>18.0±5.3 ref</td>
<td>18.3±5.4</td>
</tr>
<tr>
<td>Information Exposure</td>
<td>1.6±1.7 ref</td>
<td>1.1±1.1*</td>
</tr>
</tbody>
</table>

SD=Standard Deviation
ref=Non-adherent women are the reference group
*p<.05, **p<.001

a Knowledge was included as an index score, ranging from 1 to 29, with 29 indicating high knowledge of breast and cervical cancer.

b Information Exposure was included as an index score representing the number of sources of breast and cervical cancer information to which a woman has been exposed. The score ranged from 1 to 10.
# Table 11. Bivariate Results for Pap test Adherence, Thai Women age 18 and over, n=722

<table>
<thead>
<tr>
<th>CATEGORICAL VARIABLES</th>
<th>North (n=350)</th>
<th>South (n=372)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Non-adherent</td>
<td>Adherent</td>
<td>Non-adherent</td>
<td>Adherent</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-60</td>
<td>65 (57.0%) ref</td>
<td>151 (64.0%)</td>
<td>56 (53.3%) ref</td>
<td>215 (80.5%)*</td>
</tr>
<tr>
<td>&gt;60</td>
<td>9 (7.9%) ref</td>
<td>23 (9.7%)</td>
<td>32 (30.5%) ref</td>
<td>32 (12.0%)</td>
</tr>
<tr>
<td><strong>Belief in Karma</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer is caused by living a bad life</td>
<td>33 (28.9%) ref</td>
<td>65 (27.5%)</td>
<td>49 (46.7%) ref</td>
<td>107 (40.1%)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESL/Adult School</td>
<td>33 (28.9%) ref</td>
<td>72 (30.5%)</td>
<td>12 (11.4%) ref</td>
<td>63 (23.6%)*</td>
</tr>
<tr>
<td>High School and Above</td>
<td>76 (66.7%) ref</td>
<td>148 (62.7%)</td>
<td>49 (46.7%) ref</td>
<td>141 (52.8%)</td>
</tr>
<tr>
<td><strong>Language Preference</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostly or only English/Both Equally</td>
<td>62 (54.4%) ref</td>
<td>184 (78.0%)**</td>
<td>21 (20.0%) ref</td>
<td>100 (37.5%)</td>
</tr>
<tr>
<td><strong>Employment Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>93 (81.6%) ref</td>
<td>166 (70.3%)</td>
<td>67 (63.8%) ref</td>
<td>210 (78.7%)*</td>
</tr>
<tr>
<td><strong>Health Insurance Coverage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insured</td>
<td>51 (44.7%) ref</td>
<td>189 (80.1%)**</td>
<td>30 (28.6%) ref</td>
<td>99 (37.1%)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>59 (51.8%) ref</td>
<td>171 (72.5%)</td>
<td>39 (37.1%) ref</td>
<td>148 (55.4%)</td>
</tr>
<tr>
<td><strong>Social Support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have someone to talk to about cancer</td>
<td>112 (98.2%) ref</td>
<td>227 (96.2%)</td>
<td>101 (96.2%) ref</td>
<td>256 (95.9%)</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Need transportation to medical visits</td>
<td>34 (29.8%) ref</td>
<td>37 (15.7%)*</td>
<td>67 (63.8%) ref</td>
<td>136 (50.9%)*</td>
</tr>
<tr>
<td><strong>Physician Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female only physician</td>
<td>59 (51.8%) ref</td>
<td>109 (46.2%)</td>
<td>42 (40.0%) ref</td>
<td>124 (46.4%)</td>
</tr>
<tr>
<td><strong>Cost Burden</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have difficulty paying for necessities</td>
<td>37 (32.5%) ref</td>
<td>47 (19.9%)</td>
<td>35 (33.3%) ref</td>
<td>97 (36.3%)</td>
</tr>
<tr>
<td><strong>Intention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention to get a Pap test</td>
<td>62 (54.4%) ref</td>
<td>225 (95.3%)</td>
<td>83 (79.0%) ref</td>
<td>264 (98.9%)</td>
</tr>
<tr>
<td><strong>CONTINUOUS VARIABLES</strong></td>
<td>Mean±SD</td>
<td>Mean±SD</td>
<td>Mean±SD</td>
<td>Mean±SD</td>
</tr>
<tr>
<td>Knowledge</td>
<td>16.5±3.2 ref</td>
<td>17.7±3.4*</td>
<td>17.4±3.4 ref</td>
<td>18.3±3.2*</td>
</tr>
<tr>
<td>Years in the U.S.</td>
<td>9.8±9.2 ref</td>
<td>15.5±10.1**</td>
<td>14.6±9.0 ref</td>
<td>15.7±8.4</td>
</tr>
<tr>
<td>Information Exposure</td>
<td>1.7±1.9 ref</td>
<td>2.8±2.3**</td>
<td>1.7±1.3 ref</td>
<td>2.1±1.4*</td>
</tr>
</tbody>
</table>

SD=Standard Deviation  
ref=Non-adherent women are the reference group  
*p<.05, **p<.001  
a Knowledge was included as an index score, ranging from 1 to 29, with 29 indicating high knowledge of breast and cervical cancer.  
b Information Exposure was included as an index score representing the number of sources of breast and cervical cancer information to which a woman has been exposed. The score ranged from 1 to 10.
C. Results of Multivariate Analysis

As previously noted, separate analyses were performed on each group of women in order to identify group-specific factors associated with breast and cervical cancer screening adherence. Model 1 includes only individual-level predictors and Model 2 includes only environmental-level predictors. Results of the multivariate analyses of mammogram adherence for Cambodian and Thai women are presented in Tables 10 and 11, respectively.

MODEL 1: Individual-Level Factors

Mammogram Adherence

Cambodian

Number of years in the U.S. was the only significant predictor of mammogram adherence for Cambodian women in Northern (Table 11). For every additional year in the U.S., Cambodian women in Northern California were 1.1 times more likely to be adherent with mammogram utilization (OR=1.137, \(p<.05\)). For Cambodian women in Southern California, knowledge of breast and cervical cancer and belief in karma were significant predictors of mammogram adherence. Cambodian women in the south were 1.2 times more likely to be adherent with every 1 point increase in the knowledge index score (OR=1.253, \(p<.001\)) and those who believed that cancer is caused by living a bad life were almost 4 times more likely to be adherent with mammogram screening (OR=3.925, \(p<.05\)).

Thai

Number of years in the U.S. and health insurance coverage were significant predictors of mammogram adherence for women in both Northern and Southern California. For an additional year in the U.S., Thai women in Northern (OR=1.065, \(p<.05\)) and Southern (OR=1.060, \(p<.05\)) California were almost 1.1 times more likely to be adherent to mammogram utilization. Women...
with health insurance coverage were over 2 times more likely to be adherent than women without health insurance (North: OR=2.187, p<.05; South: OR=2.221, p<.05). Knowledge of breast and cervical cancer was also a significant predictor of mammogram adherence for Thai women in Southern California, such that for every one-point increase in the knowledge index score, women were almost 1.1 times more likely to be adherent with mammogram utilization (OR=1.145, p<.05).

Pap Test Adherence

Cambodian

Age was the only significant predictor of cervical cancer screening for Cambodian women in Northern California. Women between the ages of 40 and 60 years were less likely to be adherent with the Pap test compared to women under age 40 (OR=.236, p<.05). For Cambodian women in Southern California, knowledge of breast and cervical cancer and belief in karma were significant predictors of Pap test adherence. Cambodian women in the south were 1.2 times more likely to be screened with every one point increase in the knowledge index score (OR=1.245, p<.001). Additionally, as with mammograms, women who believed that cancer is caused by living a bad life are over 4 times more likely to be screened, compared to women who did not hold the same belief (OR=4.234, p<.001).

Thai

Knowledge of breast and cervical cancer and health insurance coverage were significant predictors of Pap test adherence for Thai women in Northern California. For every 1 point increase in the knowledge index score, Thai women in Northern California were approximately 1.1 times more likely to be adherent with Pap test screening (OR=1.092, p<.05)
Table 11. Adjusted Odds Ratio for Mammogram Adherence, Cambodian women in Northern and Southern California, n=252

<table>
<thead>
<tr>
<th></th>
<th>MODEL 1</th>
<th></th>
<th>p</th>
<th>MODEL 2</th>
<th></th>
<th>p</th>
<th>MODEL 1</th>
<th></th>
<th>p</th>
<th>MODEL 2</th>
<th></th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Years in U.S.</td>
<td>1.137</td>
<td></td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td>1.031</td>
<td></td>
<td>.477</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>1.124</td>
<td>.067</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.253</td>
<td></td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer caused by bad life</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>50 (42.4%)</td>
<td>1.00</td>
<td>.068</td>
<td>69 (51.5%)</td>
<td>1.00</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>68 (55.6%)</td>
<td>2.104</td>
<td></td>
<td>65 (48.5%)</td>
<td>3.925</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>40-60</td>
<td>92 (78.0%)</td>
<td>1.00</td>
<td>.989</td>
<td>83 (61.9%)</td>
<td>1.00</td>
<td>.644</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;60</td>
<td>26 (22.0%)</td>
<td>1.007</td>
<td></td>
<td>51 (38.1%)</td>
<td>.812</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Level</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High school</td>
<td>37 (31.4%)</td>
<td>1.00</td>
<td>.447</td>
<td>80 (59.7%)</td>
<td>1.00</td>
<td>.869</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESL/Adult</td>
<td>58 (49.2%)</td>
<td>.729</td>
<td>.725</td>
<td>44 (32.8%)</td>
<td>1.566</td>
<td>.604</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school and above</td>
<td>23 (19.5%)</td>
<td>1.523</td>
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Table 12. Adjusted Odds Ratio for Mammogram Adherence, Thai women in Northern and Southern California, n=560

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<td>177 (54.5%)</td>
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<td>Female</td>
<td>113 (48.1%)</td>
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<td>148 (45.5%)</td>
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</table>
Additionally, women who had health insurance coverage were over 3 times more likely to be screened than women who did not have health insurance (OR=3.164, \( p < .001 \)). Among Thai women in Southern California, age and educational level were significant predictors of Pap test adherence. Women who were over 60 years were over 3 times more likely to be screened than women under age 40 (OR=3.225, \( p < .05 \)). Women who completed high school or higher were almost 3 times more likely to be screened than women who did not complete high school (OR=2.729, \( p < .05 \)).

**MODEL 2: Social- and Environmental-Level Factors**

Separate analyses were performed to examine the effects of social and environmental variables on mammogram and Pap test screening independent of individual-level variables.

**Mammogram Adherence**

**Cambodian**

Cost burden was the most significant predictor of mammogram adherence for Cambodian women in Northern California, such that women who had difficulty paying for basic necessities were less likely to be screened than women who did not have difficulty paying for necessities (OR=.386, \( p < .05 \)). No significant predictors of mammogram adherence were observed for Cambodian women in Southern California.

**Thai**

For Thai women, exposure to breast and cervical cancer information and social support were the primary predictors of mammogram adherence, but differed by geographic region. Thai women in Northern California were 1.3 time more likely to be adherent with mammogram screening with every additional source of information (OR=1.262, \( p < .05 \)). For Thai women in
Southern California, those who had someone to talk to about cancer tests and treatment were over 3 times more likely to be adherent than women who did not have anyone to talk to about cancer tests and treatment (OR=3.409, p<.05).

Pap Test Adherence

Tables 13 and 14 present the results of the multivariate analyses of Pap test adherence for Cambodian and Thai women, respectively.

**Cambodian**

For cervical cancer screening, exposure to breast and cervical cancer information and physician gender were significant predictors of Pap test adherence for Cambodian women in Northern and Southern California, respectively. Interestingly, Cambodian women in the north were less likely to be adherent with increase exposure to information (OR=.699, p<.05). For Cambodian women in the south, those who had a female physician only were almost 6 times more likely to be adherent than women who had a male physician only or both male and female physician (OR=5.908, p<.05).

**Thai**

Marital status, transportation needs, and exposure to information were significant predictors of cervical cancer screening for Thai women in Northern California. Women who were married or living as married were over 2 times more likely to be adherent with the Pap test than single women (OR=2.247, p<.05) and women who needed transportation to medical appointments were less likely to be adherent than women who did not need transportation (OR=.459, p<.05). Additionally, Thai women in the north were 1.3 times more likely to be adherent to the Pap test with every additional source of breast and cervical cancer information.
Table 13. Adjusted Odds Ratio for Pap Test Adherence, Cambodian Women in Northern and Southern California, n=337

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<tr>
<td>Cost Burden</td>
<td></td>
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</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
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<tr>
<td>Physician Gender</td>
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<tr>
<td>Male/Both Male and Female</td>
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</tr>
<tr>
<td>Female</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Need Transportation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>No</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Exposure</td>
<td>.699 &lt;.05</td>
<td>1.020 .916</td>
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</table>
Table 14. Adjusted Odds Ratio for Pap Test Adherence, Thai Women in Northern and Southern California, n=722

<table>
<thead>
<tr>
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<th>NORTH (n=350)</th>
<th></th>
<th>SOUTH (n=372)</th>
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<tr>
<td></td>
<td>MODEL 1</td>
<td>MODEL 2</td>
<td>MODEL 1</td>
<td>MODEL 2</td>
</tr>
<tr>
<td></td>
<td>n (%) OR p</td>
<td>n (%) OR p</td>
<td>n (%) OR p</td>
<td>n (%) OR p</td>
</tr>
<tr>
<td>Number of Years in U.S.</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.092 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>Knowledge</td>
<td>1.092 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>Cancer caused by bad life</td>
<td>252 (72.0%) 1.00 .555</td>
<td>216 (58.1%) 1.00 .752</td>
<td>98 (28.0%) .843</td>
<td>156 (41.9%) .921</td>
</tr>
<tr>
<td>Disagree</td>
<td>252 (72.0%) 1.00 .555</td>
<td>216 (58.1%) 1.00 .752</td>
<td>98 (28.0%) .843</td>
<td>156 (41.9%) .921</td>
</tr>
<tr>
<td>Agree</td>
<td>98 (28.0%) .843</td>
<td>156 (41.9%) .921</td>
<td>98 (28.0%) .843</td>
<td>156 (41.9%) .921</td>
</tr>
<tr>
<td>Age</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>&lt;40</td>
<td>102 (29.1%) 1.00 .317</td>
<td>37 (9.9%) 1.00 .001</td>
<td>74 (20.2%) .900</td>
<td>.839</td>
</tr>
<tr>
<td>40-60</td>
<td>216 (61.7%) .745</td>
<td>271 (72.8%) .925</td>
<td>156 (41.9%) .921</td>
<td>156 (41.9%) .921</td>
</tr>
<tr>
<td>&gt;60</td>
<td>32 (9.1%) 1.402</td>
<td>64 (17.2%) 3.225</td>
<td>98 (28.0%) .843</td>
<td>156 (41.9%) .921</td>
</tr>
<tr>
<td>Education Level</td>
<td>21 (6.0%) 1.00 .243</td>
<td>107 (28.8%) 1.00 .05</td>
<td>105 (30.0%) .504</td>
<td>75 (20.2%) .900</td>
</tr>
<tr>
<td>Less than High school</td>
<td>21 (6.0%) 1.00 .243</td>
<td>107 (28.8%) 1.00 .05</td>
<td>105 (30.0%) .504</td>
<td>75 (20.2%) .900</td>
</tr>
<tr>
<td>ESL/Adult</td>
<td>105 (30.0%) .504</td>
<td>75 (20.2%) .900</td>
<td>105 (30.0%) .504</td>
<td>75 (20.2%) .900</td>
</tr>
<tr>
<td>High school and above</td>
<td>224 (64.0%) .576</td>
<td>190 (51.1%) 2.729</td>
<td>224 (64.0%) .576</td>
<td>190 (51.1%) 2.729</td>
</tr>
<tr>
<td>Language Preference</td>
<td>104 (29.7%) 1.00 .086</td>
<td>251 (67.5%) 1.00 .142</td>
<td>246 (70.3%) 1.699</td>
<td>121 (32.5%) 1.667</td>
</tr>
<tr>
<td>Mostly/Only Thai</td>
<td>104 (29.7%) 1.00 .086</td>
<td>251 (67.5%) 1.00 .142</td>
<td>246 (70.3%) 1.699</td>
<td>121 (32.5%) 1.667</td>
</tr>
<tr>
<td>Mostly/Only English/Both</td>
<td>246 (70.3%) 1.699</td>
<td>121 (32.5%) 1.667</td>
<td>246 (70.3%) 1.699</td>
<td>121 (32.5%) 1.667</td>
</tr>
<tr>
<td>Employment Status</td>
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<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>No</td>
<td>91 (26.0%) 1.00 .085</td>
<td>95 (25.5%) 1.00 .482</td>
<td>259 (74.0%) 1.699</td>
<td>277 (74.5%) 1.247</td>
</tr>
<tr>
<td>Yes</td>
<td>259 (74.0%) 1.557</td>
<td>277 (74.5%) 1.247</td>
<td>259 (74.0%) 1.557</td>
<td>277 (74.5%) 1.247</td>
</tr>
<tr>
<td>Health Insurance Coverage</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>No</td>
<td>110 (31.4%) 1.00 .266</td>
<td>243 (65.3%) 1.00 .235</td>
<td>240 (68.6%) 3.164</td>
<td>129 (34.7%) 1.435</td>
</tr>
<tr>
<td>Yes</td>
<td>240 (68.6%) 3.164</td>
<td>129 (34.7%) 1.435</td>
<td>240 (68.6%) 3.164</td>
<td>129 (34.7%) 1.435</td>
</tr>
<tr>
<td>Marital Status</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>Single</td>
<td>120 (34.3%) 1.00 .227</td>
<td>185 (49.7%) 1.00 .998</td>
<td>120 (34.3%) 1.00 .227</td>
<td>185 (49.7%) 1.00 .998</td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>230 (65.7%) 2.247</td>
<td>187 (50.3%)</td>
<td>230 (65.7%) 2.247</td>
<td>187 (50.3%)</td>
</tr>
<tr>
<td>Social Support</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>No</td>
<td>11 (3.1%) 1.00 .323</td>
<td>15 (4.0%) 1.00 .932</td>
<td>11 (3.1%) 1.00 .323</td>
<td>15 (4.0%) 1.00 .932</td>
</tr>
<tr>
<td>Yes</td>
<td>339 (96.9%) .523</td>
<td>357 (96.9%) .932</td>
<td>339 (96.9%) .523</td>
<td>357 (96.9%) .932</td>
</tr>
<tr>
<td>Cost Burden</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>No</td>
<td>266 (76.0%) 1.00 .257</td>
<td>240 (64.5%) 1.00 .238</td>
<td>266 (76.0%) 1.00 .257</td>
<td>240 (64.5%) 1.00 .238</td>
</tr>
<tr>
<td>Yes</td>
<td>84 (24.0%) .728</td>
<td>132 (35.5%) 1.354</td>
<td>84 (24.0%) .728</td>
<td>132 (35.5%) 1.354</td>
</tr>
<tr>
<td>Physician Gender</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>Male/Both Male and Female</td>
<td>182 (52.0%) 1.00 .521</td>
<td>206 (55.4%) 1.00 .314</td>
<td>168 (48.0%) .851</td>
<td>166 (44.6%) 1.273</td>
</tr>
<tr>
<td>Female</td>
<td>168 (48.0%) .851</td>
<td>166 (44.6%) 1.273</td>
<td>168 (48.0%) .851</td>
<td>166 (44.6%) 1.273</td>
</tr>
<tr>
<td>Need Transportation</td>
<td>1.033 .061</td>
<td>1.019 .287</td>
<td>1.077 .050</td>
<td>]&lt;.05</td>
</tr>
<tr>
<td>No</td>
<td>279 (79.7%) 1.00 .459</td>
<td>169 (45.4%) 1.00 .633</td>
<td>71 (20.3%) .459</td>
<td>203 (54.6%) .628</td>
</tr>
<tr>
<td>Yes</td>
<td>71 (20.3%) .459</td>
<td>203 (54.6%) .628</td>
<td>71 (20.3%) .459</td>
<td>203 (54.6%) .628</td>
</tr>
<tr>
<td>Information Exposure</td>
<td>1.325 .&lt;.001</td>
<td>1.144 .182</td>
<td>1.144 .182</td>
<td>1.144 .182</td>
</tr>
</tbody>
</table>

- **Note:** The table includes the adjusted odds ratio (OR) and its corresponding p-value for each variable across two models (MODEL 1 and MODEL 2) for women in Northern and Southern California. The table compares the adjusted odds ratios for Thai women in Northern and Southern California, with the adjusted odds ratio for Pap test adherence. The table includes variables such as number of years in the U.S., knowledge, cancer caused by bad life, age, education level, language preference, employment status, health insurance coverage, marital status, social support, cost burden, physician gender, need transportation, and information exposure. The p-values indicate the statistical significance of the differences between the two regions.
to which they have been exposed. Marital status was also a significant predictor of Pap test adherence for Thai women in Southern California, such that married women and women living as married were almost twice as likely to be adherent than women who were single (OR=1.998, \( p<.05 \)).

**MODEL 3: Comprehensive Model**

**Mammogram Adherence**

**Cambodian**

Predictors of mammogram adherence for Cambodian women are presented in Table 15. Number of years in the U.S. and belief in karma were significant predictors of adherence for Cambodian women in Northern California. Women were 1.1 times more likely to be adherent with mammogram screening with an additional year in the U.S. (OR=1.113, \( p<.05 \)) and those who believed that cancer is caused by a living a bad life were over 2 times more likely to be adherent than women who did not hold the same belief (OR=2.519, \( p<.05 \)). Belief in karma was also a significant predictor for Cambodian women in Southern California, but had a larger effect on mammogram adherence, such that women who believed that cancer is caused by living a bad life were almost 4 times more likely to be screened (OR=3.845, \( p<.05 \)). Knowledge of breast and cervical cancer was also a significant predictor of mammogram adherence for Cambodian women in the south. Women in this region were 1.3 times more likely to be screened with an additional point on the knowledge index score (OR=1.288, \( p<.001 \)).

**Thai**

The major predictors of mammogram adherence for Thai women are presented in Table 16. Number of years in the U.S., belief in karma, health insurance, and exposure to breast and
Table 15. Adjusted Odds Ratio for Mammogram Adherence by Individual- and Environmental-Level Factors, Cambodian Women, age 40 and over, n=252

<table>
<thead>
<tr>
<th></th>
<th>NORTH (n=118)</th>
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<th>SOUTH (n=134)</th>
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<tr>
<td></td>
<td>n (%)</td>
<td>OR</td>
<td>p</td>
<td>n (%)</td>
</tr>
<tr>
<td>Number of Years in U.S.</td>
<td></td>
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<tr>
<td></td>
<td>1.113</td>
<td>&lt;.05</td>
<td></td>
<td>1.057</td>
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<tr>
<td>Knowledge</td>
<td>1.067</td>
<td>.320</td>
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<td>1.288</td>
</tr>
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<td>Cancer caused by bad life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>50 (42.4%)</td>
<td>1.00</td>
<td>&lt;.05</td>
<td>69 (51.5%)</td>
</tr>
<tr>
<td>Agree</td>
<td>68 (57.6%)</td>
<td>2.519</td>
<td></td>
<td>65 (48.5%)</td>
</tr>
<tr>
<td>Insurance Type</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Not Public</td>
<td>20 (16.9%)</td>
<td>1.00</td>
<td>.460</td>
<td>9 (6.7%)</td>
</tr>
<tr>
<td>Public</td>
<td>98 (83.1%)</td>
<td>.663</td>
<td></td>
<td>125 (93.3%)</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>5 (4.2%)</td>
<td>1.00</td>
<td>.904</td>
<td>9 (6.7%)</td>
</tr>
<tr>
<td>Yes</td>
<td>113 (95.8%)</td>
<td>.884</td>
<td></td>
<td>125 (93.3%)</td>
</tr>
<tr>
<td>Cost Burden</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>35 (29.7%)</td>
<td>1.00</td>
<td>.144</td>
<td>5 (3.7%)</td>
</tr>
<tr>
<td>Yes</td>
<td>83 (70.3%)</td>
<td>1.282</td>
<td></td>
<td>129 (96.3%)</td>
</tr>
<tr>
<td>Information Exposure</td>
<td></td>
<td>1.012</td>
<td>.934</td>
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</tbody>
</table>

Table 16. Adjusted Odds Ratio for Mammogram Adherence by Individual- and Environmental-Level Factors, Thai Women, age 40 and over, n=560

<table>
<thead>
<tr>
<th></th>
<th>NORTH (n=235)</th>
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<th>SOUTH (n=325)</th>
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<tr>
<td></td>
<td>n (%)</td>
<td>OR</td>
<td>p</td>
<td>n (%)</td>
</tr>
<tr>
<td>Number of Years in U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.074</td>
<td>&lt;.001</td>
<td></td>
<td>1.056</td>
</tr>
<tr>
<td>Knowledge</td>
<td>1.093</td>
<td>.078</td>
<td></td>
<td>1.157</td>
</tr>
<tr>
<td>Cancer caused by bad life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>173 (73.6%)</td>
<td>1.00</td>
<td>&lt;.05</td>
<td>183 (56.3%)</td>
</tr>
<tr>
<td>Agree</td>
<td>62 (26.4%)</td>
<td>2.345</td>
<td></td>
<td>142 (43.7%)</td>
</tr>
<tr>
<td>Health Insurance</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>78 (33.2%)</td>
<td>1.00</td>
<td>&lt;.05</td>
<td>211 (64.9%)</td>
</tr>
<tr>
<td>Yes</td>
<td>157 (66.8%)</td>
<td>2.095</td>
<td></td>
<td>114 (35.1%)</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>7 (3.0%)</td>
<td>1.00</td>
<td>.475</td>
<td>12 (3.7%)</td>
</tr>
<tr>
<td>Yes</td>
<td>228 (97.0%)</td>
<td>.444</td>
<td></td>
<td>313 (96.3%)</td>
</tr>
<tr>
<td>Cost Burden</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>184 (78.3%)</td>
<td>1.00</td>
<td>.100</td>
<td>204 (62.8%)</td>
</tr>
<tr>
<td>Yes</td>
<td>51 (21.7%)</td>
<td>1.381</td>
<td></td>
<td>121 (37.2%)</td>
</tr>
<tr>
<td>Information Exposure</td>
<td></td>
<td>1.339</td>
<td>&lt;.05</td>
<td></td>
</tr>
</tbody>
</table>
cervical cancer information were significant predictors of mammogram adherence for women in Northern California. Women in the north were 1.1 times more likely to be screened with an additional year in the U.S. (OR=1.074, \( p < .001 \)), over 2 times more likely to be screened if they believed that cancer is caused by living a bad life (OR=2.345, \( p < .05 \)) or if they had health insurance coverage (OR=2.095, \( p < .05 \)), and 1.3 times more likely to be screened with exposure to an additional source of breast and cervical cancer information (OR=1.339, \( p < .05 \)). Among Thai women in Southern California, number of years in the U.S., knowledge of breast and cervical cancer, health insurance coverage, and social support were significant predictors of mammogram adherence in the comprehensive model. Women in the south were 1.1 times more likely to be screened with an additional year in the U.S. (OR=1.056, \( p < .05 \)) and an additional point on the knowledge index score (OR=1.093, \( p < .05 \)), 2.5 times more likely to be screened if they had health insurance coverage, and almost 4 times more likely to be screened if they had someone to talk to about cancer tests and treatment (OR=3.811, \( p < .05 \)).

**Pap Test Adherence**

Tables 17 and 18 present the results of the multivariate analysis of the comprehensive model for Cambodian and Thai women, respectively.

**Cambodian**

In the comprehensive model, age and exposure to breast and cervical cancer information were significant predictors of Pap test adherence for Cambodian in Northern California. Women who were between the ages of 40 and 60 years were less likely to be adherent than women who were less than 40 years (OR=.217, \( p < .05 \)). Interestingly, Cambodian women in the north were less likely to be adherent with increased exposure to breast and cervical cancer information.
Table 17. Adjusted Odds Ratio for Pap test Adherence by Individual- and Environmental-Level Factors, Cambodian Women, age 18 and over, n=337

<table>
<thead>
<tr>
<th></th>
<th>NORTH (n=162)</th>
<th></th>
<th>SOUTH (n=175)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>OR</td>
<td>p</td>
<td>n (%)</td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer caused by bad life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>69 (42.6%)</td>
<td>1.00</td>
<td>.365</td>
<td>90 (51.4%)</td>
</tr>
<tr>
<td>Agree</td>
<td>93 (57.4%)</td>
<td>1.053</td>
<td>.365</td>
<td>85 (48.6%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;40</td>
<td>35 (21.6%)</td>
<td>1.00</td>
<td>&lt;.05</td>
<td>35 (20.0%)</td>
</tr>
<tr>
<td>40-60</td>
<td>98 (60.5%)</td>
<td>.217</td>
<td>&lt;.05</td>
<td>86 (49.1%)</td>
</tr>
<tr>
<td>&gt;60</td>
<td>29 (17.9%)</td>
<td>.667</td>
<td>.343</td>
<td>54 (30.9%)</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>45 (27.8%)</td>
<td>1.00</td>
<td>.537</td>
<td>87 (49.7%)</td>
</tr>
<tr>
<td>ESL/Adult School</td>
<td>78 (48.1%)</td>
<td>.624</td>
<td>.369</td>
<td>54 (30.9%)</td>
</tr>
<tr>
<td>High School and Above</td>
<td>39 (24.1%)</td>
<td>.985</td>
<td>.973</td>
<td>34 (19.4%)</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>60 (37.0%)</td>
<td>1.00</td>
<td>.068</td>
<td>79 (45.1%)</td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>102 (63.0%)</td>
<td>.503</td>
<td></td>
<td>96 (54.9%)</td>
</tr>
<tr>
<td>Insurance Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Public</td>
<td>31 (19.1%)</td>
<td>1.00</td>
<td>.415</td>
<td>27 (15.4%)</td>
</tr>
<tr>
<td>Public</td>
<td>131 (80.9%)</td>
<td>.680</td>
<td></td>
<td>148 (84.6%)</td>
</tr>
<tr>
<td>Physician Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male, Both Male and Female</td>
<td>98 (60.5%)</td>
<td>1.00</td>
<td>.205</td>
<td>161 (92.0%)</td>
</tr>
<tr>
<td>Female Only</td>
<td>64 (39.5%)</td>
<td>1.601</td>
<td></td>
<td>14 (8.0%)</td>
</tr>
<tr>
<td>Need Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>119 (73.5%)</td>
<td>1.00</td>
<td>.906</td>
<td>87 (49.7%)</td>
</tr>
<tr>
<td>Yes</td>
<td>43 (26.5%)</td>
<td>.950</td>
<td></td>
<td>88 (50.3%)</td>
</tr>
<tr>
<td>Information Exposure</td>
<td>.741</td>
<td>&lt;.05</td>
<td></td>
<td>.991</td>
</tr>
</tbody>
</table>

(OR=.741, p<.05). Among Cambodian women in Southern California, knowledge of breast and cervical cancer, belief in karma, and education were significant predictors of Pap test adherence, such that women were 1.2 times more likely to be adherent with an additional point on the knowledge index (OR=1.245, p<.001) and women who believed that cancer is caused by living a bad life were almost 5 times more likely to be screened than women who did not hold the same belief (OR=4.761, p<.001).
For Thai women, knowledge of breast and cervical cancer information, health insurance coverage, transportation needs, and exposure to breast and cervical cancer information were significant predictors of Pap test adherence for women in Northern California. Women in this region were 1.1 times more likely to be screened with an additional point on the knowledge index score (OR=1.120, p<.05). Women with health insurance coverage were almost 4 times more likely to be screened than women who did not have health insurance (OR=3.916, p<.001) and women who needed transportation to medical appointments were less likely to be screened than women who did not need transportation (OR=.456, p<.05). Additionally, women in the north were 1.4 times more likely to be screened with exposure to an additional source of breast and cervical cancer information OR=1.399, p<.001). For Thai women in Southern California, knowledge of breast and cervical cancer information, age, education level, and marital status were significant predictors of screening. Women in the south were 1.1 times more likely to be screened with an additional point on the knowledge index score (OR=1.077, p<.05) and were over 4 times more likely to be screened if they were older than 60 years of age (OR=4.014, p<.001) compared to women less than 40 years of age. Women who completed high school or higher were 3 times more likely to be screened than women who did not complete high school (OR=3.00, p<.05) and married women were almost 2 times more likely to be screened than single women (OR=1.850, p<.05).

Behavioral Intention and Mammogram Adherence

As previously noted, two separate analyses using follow-up data were performed to examine the association of behavioral intention and mammogram adherence among Cambodian
Table 18. Adjusted Odds Ratio for Pap test Adherence by Individual- and Environmental-Level Factors, Thai Women, age 18 and over, n=722

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>NORTH (n=350)</th>
<th></th>
<th>SOUTH (n=372)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer caused by bad life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1.120</td>
<td>&lt;.05</td>
<td>1.077</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Agree</td>
<td>1.199</td>
<td>.546</td>
<td>1.934</td>
<td>.798</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;40</td>
<td>102 (29.1%)</td>
<td>1.00</td>
<td>37 (9.9%)</td>
<td>1.00</td>
</tr>
<tr>
<td>40-60</td>
<td>216 (61.7%)</td>
<td>2.143</td>
<td>271 (72.8%)</td>
<td>1.267</td>
</tr>
<tr>
<td>&gt;60</td>
<td>32 (9.1%)</td>
<td>1.692</td>
<td>64 (17.2%)</td>
<td>4.014</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>21 (6.0%)</td>
<td>1.00</td>
<td>107 (28.8%)</td>
<td>1.00</td>
</tr>
<tr>
<td>ESL/Adult School</td>
<td>105 (30.0%)</td>
<td>.299</td>
<td>75 (20.2%)</td>
<td>1.170</td>
</tr>
<tr>
<td>High School and Above</td>
<td>224 (64.0%)</td>
<td>.429</td>
<td>190 (51.1%)</td>
<td>3.00</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>120 (34.3%)</td>
<td>1.00</td>
<td>185 (49.7%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Married/Living as Married</td>
<td>230 (65.7%)</td>
<td>1.727</td>
<td>187 (50.3%)</td>
<td>1.850</td>
</tr>
<tr>
<td>Health Insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>110 (31.4%)</td>
<td>1.00</td>
<td>243 (65.3%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>240 (68.6%)</td>
<td>3.916</td>
<td>129 (34.7%)</td>
<td>1.494</td>
</tr>
<tr>
<td>Physician Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male, Both Male and Female</td>
<td>182 (52.0%)</td>
<td>1.00</td>
<td>206 (55.4%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Female Only</td>
<td>168 (48.0%)</td>
<td>1.087</td>
<td>166 (44.6%)</td>
<td>1.284</td>
</tr>
<tr>
<td>Need Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>279 (79.7%)</td>
<td>1.00</td>
<td>169 (45.4%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>71 (20.3%)</td>
<td>.456</td>
<td>203 (54.6%)</td>
<td>.665</td>
</tr>
<tr>
<td>Information Exposure</td>
<td>1.399</td>
<td>&lt;.001</td>
<td>1.145</td>
<td>.199</td>
</tr>
</tbody>
</table>

and Thai women in Southern California. Mammogram intention was the only independent variable in Model A, while Model B examines intention, controlling for other individual- and environmental-level factors.

Cambodian

Results for Cambodian women in Northern and Southern California are presented in Table 19. For Cambodian women in Northern California, intention at baseline was not significantly associated with mammogram adherence at follow-up in Model A or B. For
Cambodian women in Southern California, intention at baseline was a significant predictor of mammogram adherence at follow-up in Model A, where women who intended to get a mammogram at baseline were more likely to be adherent at follow-up compared to women who did not intend to get a mammogram (OR=1.462, \( p<.05 \)). However, intention was no longer significant in Model B when controlling for other individual- and environmental-level variables.

No other individual- and environmental-level variables in the model were significant.

Table 19. Adjusted Odds Ratio for **Mammogram Adherence at Follow-up** by Behavioral Intention and Individual- and Environmental-Level Factors, Cambodian Women, age 40 and over, \( n=114 \)

<table>
<thead>
<tr>
<th></th>
<th>NORTH (( n=40 ))</th>
<th>SOUTH (( n=74 ))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>( OR )</td>
</tr>
<tr>
<td><strong>MODEL A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention</td>
<td>1.275</td>
<td>.223</td>
</tr>
<tr>
<td><strong>MODEL B</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Years in U.S.</td>
<td>1.110</td>
<td>.223</td>
</tr>
<tr>
<td>Knowledge</td>
<td>.994</td>
<td>.973</td>
</tr>
<tr>
<td>Cancer caused by bad life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>23 (57.5%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Agree</td>
<td>17 (42.5%)</td>
<td>.853</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-60</td>
<td>31 (77.5%)</td>
<td>1.00</td>
</tr>
<tr>
<td>&gt;60</td>
<td>9 (22.5%)</td>
<td>.585</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>9 (22.5%)</td>
<td>1.00</td>
</tr>
<tr>
<td>ESL/Adult School</td>
<td>15 (37.5%)</td>
<td>2.304</td>
</tr>
<tr>
<td>High School and Above</td>
<td>16 (40.0%)</td>
<td>1.448</td>
</tr>
<tr>
<td>Language Preference</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostly or Only Thai</td>
<td>26 (65.0%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Mostly or Only English/Both</td>
<td>14 (35.0%)</td>
<td>.181</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>29 (72.5%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>11 (27.5%)</td>
<td>.610</td>
</tr>
<tr>
<td>Health Insurance Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not Public</td>
<td>9 (22.5%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Public</td>
<td>31 (77.5%)</td>
<td>.154</td>
</tr>
<tr>
<td>Need Transportation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>29 (72.5%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>11 (27.5%)</td>
<td>.703</td>
</tr>
<tr>
<td>Intention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>19 (47.5%)</td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>21 (52.5%)</td>
<td>2.268</td>
</tr>
</tbody>
</table>
Table 20 presents results of the analysis of behavioral intention and mammogram adherence at follow-up for Thai women in Northern and Southern California. For Thai women in Northern California, intention at baseline was significantly associated with mammogram adherence at follow-up; women who intended to get a mammogram were almost two times more likely to be adherent at follow-up than women who did not intend to get a mammogram (OR=1.776, \(p<.05\)). However, intention was no longer significant in Model B when controlling for other individual- and environmental-level variables. Intention at baseline was also significantly associated with mammogram adherence at follow-up for Thai women in Southern California. Women who intended to get a mammogram were over three times more likely to be adherent at follow-up than women who did not intend to get screened (OR=3.292, \(p<.001\)). Intention remained a significant predictor of screening for Thai women in the south, even after controlling for other variables in Model B. However, the strength of significance decreased slightly, from \(p=.000\) to \(p=.023\). Also notable is the substantial increase in the effect of intention on mammogram adherence, where women who intended to get a mammogram at baseline were over eleven times more likely to be adherent at baseline compared to women who had no intention to get a mammogram (OR=11.554, \(p<.05\)).
Table 20. Adjusted Odds Ratio for **Mammogram Adherence at Follow-up** by Behavioral Intention and Individual- and Environmental-Level Factors, Thai Women, age 40 and over, n=162

<table>
<thead>
<tr>
<th></th>
<th>NORTH (n=64)</th>
<th></th>
<th>SOUTH (n=98)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>OR</td>
<td>p</td>
<td>n (%)</td>
</tr>
<tr>
<td><strong>MODEL A</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intention</td>
<td>1.776</td>
<td>&lt;.05</td>
<td></td>
<td>3.292</td>
</tr>
<tr>
<td><strong>MODEL B</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Years in U.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>.893</td>
<td>.376</td>
<td>1.118</td>
<td>.409</td>
</tr>
<tr>
<td>Cancer caused by bad life</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree</td>
<td>1.00</td>
<td>.148</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Agree</td>
<td>5.042</td>
<td>.148</td>
<td></td>
<td>45.9%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-60</td>
<td>1.00</td>
<td>.692</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>&gt;60</td>
<td>1.705</td>
<td>.692</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>1.00</td>
<td>.491</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>ESL/Adult School</td>
<td>7.971</td>
<td>.233</td>
<td></td>
<td>2.372</td>
</tr>
<tr>
<td>High School and Above</td>
<td>5.727</td>
<td>.300</td>
<td></td>
<td>1.298</td>
</tr>
<tr>
<td>Language Preference</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostly or Only Thai</td>
<td>1.00</td>
<td>&lt;.05</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Mostly or Only English/Both</td>
<td>10.868</td>
<td>.329</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>13 (20.3%)</td>
<td>.389</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>51 (79.7%)</td>
<td>.335</td>
<td></td>
<td>63 (64.3%)</td>
</tr>
<tr>
<td>Health Insurance Coverage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>.140</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>3.887</td>
<td>.140</td>
<td></td>
<td>2.774</td>
</tr>
<tr>
<td>Need Transportation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1.00</td>
<td>.282</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>2.798</td>
<td>.282</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Intention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>13 (20.3%)</td>
<td>.476</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Yes</td>
<td>51 (79.7%)</td>
<td>.476</td>
<td></td>
<td>1.00</td>
</tr>
</tbody>
</table>
Summary

Mammogram Adherence

Cambodian

Number of years in the U.S. and belief in karma were positively associated with mammogram adherence for women in Northern California. Notably, belief in karma was not statistically significant in Model 1, but became a significant predictor of screening in the comprehensive model. Belief in karma was also positively associated with mammogram adherence for women in Southern California, as well as knowledge of breast and cervical cancer.

Thai

Number of years in the U.S., belief in karma, health insurance coverage, and exposure to breast and cervical cancer information were positively associated with mammogram adherence for women in Northern California. Similar to Cambodian women in the north, belief in karma was not statistically significant in Model 1, but became a significant predictor of screening in the comprehensive model. Number of years in the U.S., knowledge of breast and cervical cancer, health insurance coverage, and social support were positively associated with mammogram adherence for women in Southern California.

Pap Test Adherence

Cambodian

Younger age and exposure to breast and cervical cancer information were statistically significant predictors of Pap test adherence for women in Northern California. Interestingly, both variables had a negative effect on screening. Knowledge of breast and cervical cancer and belief in karma were positively associated with Pap test adherence for women in Southern
California. Having a female physician only was positively associated with screening for women in the south in Model 2, but was no longer significant in the comprehensive model.

Thai

Health insurance coverage, transportation, and exposure to breast and cervical cancer screening were statistically significant predictors of Pap test adherence for women in Northern California. Marital status was positively associated with screening in Model 2 for this group, but was no longer significant in the comprehensive model. For women in Southern California, knowledge of breast and cervical cancer screening, age, education, and marital status were positively associated with Pap test adherence.

Behavioral Intention

Cambodian

Baseline intention was not significantly associated with mammogram adherence at follow-up for women in Northern California. For women in Southern California, baseline intention was positively associated with screening in Model A, but was no longer significant when controlling for other individual and environmental level variables in Model B.

Thai

Like Cambodian women in Southern California, baseline intention was positively associated with mammogram adherence at follow-up for Thai women in Northern California in Model A, but was no longer a significant predictor in Model B when controlling for other individual- and environmental-level variables in Model B. For Thai women in Southern California, baseline intention was positively associated with mammogram adherence at follow-up in Model A and remained significant in Model B when controlling for other individual- and environmental-level variables.
Hypotheses Revisited

This study had one primary hypothesis:

- Certain individual, socio-cultural, and environmental variables will be directly associated with mammogram and Pap test adherence.

Based on a review of the literature, thirteen individual-, social-, and environmental-level factors were hypothesized to have main effects on mammogram and Pap test adherence (Table 21). As noted previously, these factors were categorized according to the five levels of behavioral influence in McLeroy’s Social Ecological Model. As anticipated, the significant predictors of screening differed by ethnic group and geographic location.

At the Intrapersonal Level:

The hypothesis that younger women will be more likely to be adherent with screening was supported only for Pap test adherence in Cambodian women in Northern California. Age was also a significant predictor for Pap test adherence for Thai women in Southern California, but had a positive effect, such that older women were over four times more likely to be screened.

It was hypothesized that women who have lived in the U.S. for a longer length of time will be more likely to be up-to-date with screening. This hypothesis was supported for mammogram adherence in three out of four groups: Cambodian women in Northern California and Thai women in Northern and Southern California.

The study hypothesized that women with more knowledge of breast and cervical cancer symptoms, risk factors, and screening will be more likely to be screened. This hypothesis was supported for mammogram adherence in Cambodian and Thai women in Southern California. This hypothesis was also supported for Pap test adherence in the same two groups of women.
Table 21. List of Supported Hypotheses

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Hypothesis</strong></td>
<td></td>
</tr>
<tr>
<td>• Certain individual, socio-cultural, and environmental level factors will be directly associated with mammogram and Pap test adherence.</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Sub-hypotheses 1:</strong> Women who are more likely to be adherent to recommended screening guidelines have the following characteristics:</td>
<td></td>
</tr>
<tr>
<td><strong>Intrapersonal Level</strong></td>
<td></td>
</tr>
<tr>
<td>• Younger women</td>
<td>✓</td>
</tr>
<tr>
<td>• Women who have lived in the U.S. for a longer length of time</td>
<td>✓</td>
</tr>
<tr>
<td>• Women with more knowledge of breast and cervical cancer</td>
<td>✓</td>
</tr>
<tr>
<td>• Women who do not believe in karma</td>
<td></td>
</tr>
<tr>
<td>• Women who have higher education levels</td>
<td>✓</td>
</tr>
<tr>
<td>• Women with health insurance coverage (Thai) or public health insurance (Cambodian)</td>
<td>✓</td>
</tr>
<tr>
<td>• Women who speak mostly English or both English and their ethnic language equally</td>
<td></td>
</tr>
<tr>
<td>• Women who are unemployed</td>
<td></td>
</tr>
<tr>
<td><strong>Interpersonal Level</strong></td>
<td></td>
</tr>
<tr>
<td>• Women who are married or living as married</td>
<td>✓</td>
</tr>
<tr>
<td>• Women with someone to talk to about cancer tests or treatment</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Organizational Level</strong></td>
<td></td>
</tr>
<tr>
<td>• Women who have a female physician</td>
<td></td>
</tr>
<tr>
<td>• Women who have transportation to medical appointments</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Community Level</strong></td>
<td></td>
</tr>
<tr>
<td>• Women who are able to keep necessities</td>
<td></td>
</tr>
<tr>
<td><strong>Societal Level</strong></td>
<td></td>
</tr>
<tr>
<td>• Women who are exposed to a greater amount of breast and cervical cancer information</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Sub-hypothesis 2:</strong> Behavioral intention is not associated with mammogram adherence</td>
<td>✓</td>
</tr>
</tbody>
</table>

The hypothesis that women who believe in karma are less likely to be screened was not supported. Quantitative result indicated that a belief in karma was positively associated with mammogram adherence for three out of four groups of women: Cambodian women in Northern
and Southern California and Thai women in Northern California. A belief in karma was also positively associated with Pap test adherence for Cambodian women in Southern California and had the largest effect on this group, such that women who believed that cancer is caused by living a bad life were over four times more likely to be screened than women who do not hold the same belief.

The hypothesis that women with higher levels of education will be more likely to be screened was supported only for Pap test adherence in Thai women in Southern California. Among this group, those who have completed high school or higher were three times more likely to be adherent with Pap test screening than women who completed less than high school.

The hypothesis that women who spoke mostly English or both their ethnic language and English equally will be more likely to be screened was not supported for mammogram or Pap test adherence in any of the four groups of women in this study.

The hypothesis that women who have health insurance coverage (Thai) or public health insurance (Cambodian) will be more likely to be screened was supported for mammogram adherence for Thai women in Northern and Southern California and for Pap test adherence for Thai women in Northern California. For mammogram adherence, both Thai women in Northern and Southern California were over two times more likely to be screened if they had health insurance coverage. For Pap test adherence, Thai women in Northern California were almost four times more likely to be screened if they had health insurance coverage.

Results of this study did not support the hypothesis that employed women will be less likely to be screened than unemployed women.
At the Interpersonal Level:

The hypothesis that women who are married or living as married will be more likely to be screened was supported only for Pap test adherence in Thai women in Southern California. Women who were married or living as married were almost two times more likely to be adherent with Pap test guidelines than women who were single (i.e., never married, separated, divorced, or widowed).

The hypothesis that women with someone to talk to about cancer tests and treatment was supported only for mammogram adherence in Thai women in Southern California. Women who had someone to talk to about cancer tests and treatment were almost four times more likely to be adherent with mammogram guidelines than women who did not have anyone to talk to.

At the Organizational Level:

The hypothesis that women who have transportation will be more likely to be screened was supported only for Pap test adherence in Thai women in Northern California. Among this group, women who needed transportation to medical appointments were less likely to be adherent with Pap test guidelines than women who did not need transportation.

Results of this study did not support the hypothesis that women who have a female physician will be more likely to be screened.

At the Community Level:

It was hypothesized that women who were able to afford basic necessities will be more likely to be screened. This hypothesis was not supported, such that difficulty paying for basic necessities was not significantly associated with either of the two outcomes of this study.
At the Societal Level:

The hypothesis that women who were exposed to a greater amount of breast and cervical cancer information will be more likely to be screened was supported for mammogram adherence in Thai women in Southern California. This hypothesis was also supported for Pap test adherence in Cambodian women in Northern California and Thai women in Southern California. Interestingly, exposure to breast and cervical cancer was negatively associated with Pap test adherence for Cambodian women in Northern California, but positively associated with screening for the other two groups.

Behavioral Intention

The hypothesis that behavioral intention is not associated with mammogram adherence was supported for Cambodian women in Northern and Southern California and for Thai women in Northern California. Behavioral intention was positively associated with mammogram adherence, such that women who had intention to be screened at baseline were more than 11 times more likely to be adherent at follow-up.
CHAPTER SEVEN: QUALITATIVE RESULTS

A. Inductive Findings

A total of 24 Cambodian and 18 Thai women participated in the focus group interviews on breast cancer screening. On average, Thai women were significantly older compared to Cambodian women (62 years vs. 52 years). With the exception of one participant, every woman had received a mammogram through the PATH for Women project and has used navigation services. One Thai woman accompanied her friend to the focus group interview and asked to participate and give her thoughts on barriers to healthcare for the Thai community. All women had seen a physician in the U.S. at least once prior to receiving a mammogram through the project.

Three key themes emerged from the data when discussing barriers to mammogram screening in both the Cambodian and Thai community: 1) Limited English fluency, 2) lack of transportation, and 3) culturally-based norms. In addition to the barriers listed, themes related to decisional balance, or the pros and cons of screening, and self-efficacy also emerged from the data. Table 22 presents three key themes and the domains and properties within each theme.
Table 22. Key Themes in Mammogram Access for Cambodian and Thai Women in Southern California

<table>
<thead>
<tr>
<th>Themes</th>
<th>Domains</th>
<th>Properties</th>
</tr>
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<tbody>
<tr>
<td>Limited English fluency</td>
<td>Verbal communication</td>
<td>Difficulty scheduling appointments</td>
</tr>
<tr>
<td></td>
<td>Written communication</td>
<td>Inability to communicate with clinic staff and practitioners</td>
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<tr>
<td></td>
<td></td>
<td>Cannot complete medical intake forms</td>
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<td></td>
<td></td>
<td>Cannot read and comprehend follow-up letters</td>
</tr>
<tr>
<td>Lack of Transportation</td>
<td>Cannot drive</td>
<td>Clinic far from home</td>
</tr>
<tr>
<td></td>
<td>Does not own car</td>
<td>Will not drive on freeways</td>
</tr>
<tr>
<td>Culturally-based Norms</td>
<td>Female decorum</td>
<td>No one to provide transportation</td>
</tr>
<tr>
<td></td>
<td>Embarrassment</td>
<td>Recognition of cultural taboo against discussing reproductive health issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discomfort due undressing in front of a male other than her husband</td>
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</table>

**Limited English Fluency**

When asked about healthcare access, the majority of Cambodian and Thai women reported limited English fluency as being the biggest barrier. The inability to speak, read, or write English resulted in feelings of helplessness and frustration. Women in the focus group interviews shared that they did not know where to go for healthcare and could not schedule an appointment, complete medical intake forms, or read follow-up letters. However, perhaps the most significant barrier that having limited English fluency poses is the failure to communicate effectively with practitioners, as indicated in the following quote:

… the conversation between doctor and I will be fruitless. I am not able to describe my problems for him to help. He would not get any information from me, either. Treatment may not be possible. (#CFG1-11, Cambodian, age 50)
Another woman shared:

Sometimes when I was listening to the doctors, they spoke so naturally that I was afraid to ask them. They might think that I am stupid if I ask them. As a result, I just said “Yes. Yes.” (#TFG1-11, Thai, age 48)

As the quotes above suggest, women were afraid to ask questions because they believed that practitioners would not understand them if they did not use the correct terminology. More specifically, women did not want to appear unintelligent, so they avoided asking questions altogether and left the clinic feeling unsatisfied with the care they received. A language barrier can also cause undue emotional stress when women did not know why they needed to undergo certain procedures. As one woman stated:

Because of the language I don’t understand what doctor said. I end up having a uterus biopsy. It scared me to death to have a small surgery like that. It is very important to have translator to translate what the doctor wants to do. That is a big problem for the people that don’t know English. (#CFG2-10, Cambodian, 62)

Another woman expressed the amount of fear she experienced when she could not understand a notification that was mailed to her home following a breast exam:

I was so frightened that I could not fall asleep after I received a note from breast exam department. I did not know what it was about because I could not read it. (#CFG1-7, Cambodian, age 55)

Lack of understanding about medications, coupled with an inability to ask questions can have serious consequences beyond dissatisfaction with quality of care and emotional stress. Not being able to tell a practitioner what medication one is currently taking or to ask when and how much to take of a new medication can result in incorrect dosage or life-threatening drug interactions. One Thai woman shared, “When and what medication that we should take? My primary doctor prescribed medication, and I keep on taking it without knowing when to stop”
Another woman shared, “Sometimes, we don’t know if we take double medication or not. We might have taken complete vitamins and iron separately. Anyhow, we don’t know if the medication crashes or conflicts with each other” (#TFG1-11, Thai, age 48).

While both Cambodian and Thai women expressed feelings of helplessness, several Thai women also shared their frustration because they were unable to take optimal care of their health despite having breast health knowledge and high levels of self-efficacy. A vast majority of the Thai women in the focus group interviews were aware of the benefits of early detection and were generally proactive about screening. One woman shared that she performs breast self-exams to take charge of her own health, “I check and feel myself while taking a shower or before going to bed because the doctor cannot check us all the time” (#TFG1-3, age 55). Despite having the intention to be screened, however, Thai women in the study knew that they would not be able to effectively navigate the healthcare system or communicate with practitioners without help.

We didn’t know what to say besides saying, “No problem” or “No. No.” That was all we said. What else? We didn’t understand what the doctors said. (#TFG1-2, Thai, age 76)

I might understand the Thai or Chinese doctors. But I need an interpreter to interpret what the Caucasian doctors say because I don’t understand them. If it is possible to have a [Thai] health center here, it will be great. (#TFG1-4, Thai, age 60)

One woman expressed that an inability to communicate with practitioners would make a medical appointment pointless and firmly said, “We wouldn’t know anything. If we go to see a doctor on our own, we wouldn’t know anything. It would be very difficult.” (#TFG1-1, age 66)
As noted by the quotes above, Thai women in the focus groups have previously sought healthcare, but found it very difficult to do so on their own. The inability to follow instructions can cause additional embarrassment during a procedure that itself is embarrassing enough. One Thai woman, who sought breast health services by herself, shared, “…sometimes when we couldn’t interpret or understand what side they wanted us to turn (for mammogram), we would turn our breast the wrong way” (#TFG1-5, Thai, age 52).

Language is tied to many aspects of the healthcare system beyond patient/provider communication. Without the ability to speak English fluently, women did not know where to go for preventive healthcare and were unable to schedule appointments, fill out paperwork, understand prescription medications, or read and interpret follow-up lab results. Together, these barriers can seem insurmountable and can prevent a woman from attempting to access healthcare altogether. One woman indicated that she would rather forego healthcare than try to overcome the language barrier on her own:

I would not understand anything if I go to see the doctor by myself... I do not know how to read English. I have difficulties to fill out the forms. … I would rather stay home instead of going to see the doctor. (#CFG12-1, Cambodian, age 57)

Many Thai women in the study shared that their adult children have accompanied them to medical appointments in the past. Adult children provided transportation and served as interpreters, but the same women also shared that their children are often busy at work and are rarely available. This sentiment is included in the next barrier to healthcare.
Lack of transportation

The second central theme and barrier to healthcare is lack of transportation. This point was made when responding to questions about what made accessing healthcare difficult for women in their community. For example,

I have a difficult time to find the place for my health, I don’t know how to drive. I don’t know how to drive. (#CFG2-4, Cambodian, age 42)

If it is possible, we would like to get a ride for the seniors…it will help the seniors. (#TFG1-4, Thai, age 60)

More specifically, some women did not know how to drive or did not drive on freeways, which made it difficult to access services at facilities far from home, as indicated by the quote below:

As for me, The Asian Pacific Clinic is far and if I can’t drive, I won’t go to see a doctor. It is difficult. Someone said to their children to make themselves available and take mom or dad to see a doctor which will take half a day or so. (#TFG1-4, Thai, age 60)

As the quote above suggests, many Thai women in the focus group interviews did not want to burden their children because of the long wait times at local community clinics, which often required that their family member take a day off from work. However, being accompanied by their adult children is the only way some women could visit a physician and women had to wait until their children were available. This is illustrated in the following quotes,

It takes over an hour to wait for the medication. It is difficult for people who live far away and can’t drive, and the children have to go to work. The Asian Pacific Clinic should establish a branch here to be separated from there. We have to wait for the children. Oh, it is difficult. Sometimes the kids are busy working. (#TFG1-4, Thai, age 60)

Some people have children, but they are working. (#TFG1-12, Thai, age 52)
Right now, my children or friends take me to the doctor. If they are not available, we are in trouble. (#TFG2-2, Thai, age 57)

Interestingly, the role of adult children in healthcare access was only mentioned during focus groups with Thai women and not in interviews with Cambodian women, even though transportation was a barrier for both groups. Thai women in the focus group interviews were on average ten years older than Cambodian women (62 years vs. 52 years). Therefore, this finding may be due in part to Cambodian women having younger children.

**Culturally-based norms**

Women in the study also appeared to be very aware of a cultural prohibition against openly discussing women’s health issues. To be considered a “good girl” in Southeast Asian society, women need to adhere to proper female decorum. These unwritten rules heavily influence attire and social behavior, and women who transgress run the risk of being labeled as “inappropriate,” “indecent,” or “bad.” According to women in this study, female modesty is a deeply ingrained culturally-based norm that not only influences reproductive health-seeking behavior for women in Cambodia and Thailand, but it also plays an important role in breast and cervical cancer screening for Cambodian and Thai women in the U.S. Despite educational campaigns to increase breast and cervical cancer awareness, free screening programs, and a higher social acceptance of openly discussing reproductive health issues in the U.S., both Cambodian and Thai women indicated that many women in their community still do not take care of their reproductive health because of the social standards of female decorum. Due to the nature of the exams, most women in the U.S. experience some degree of embarrassment over breast and cervical cancer screening. However, it appears that Cambodian and Thai women in this study experience what can only be described as extreme modesty. The topic of shyness and
embarrassment was reiterated many times throughout the discussion with both groups of women.

Modesty is very much culturally-oriented, as one woman described,

In our Thai culture, for instance, we are shy when we get mammogram and Pap smear. That is our culture. I believe that before we came to U.S., we all didn’t get Pap smear due to the difference in the cultures. That is one reason, isn’t it? That is the culture. In Thailand, women do not want to get mammogram or Pap smear because they are shy. That is the number one reason. (#TFG1-11, Thai, age 48)

Several Cambodian women shared that in their culture, women do not expose themselves to anyone except their spouses, and therefore, breast and cervical cancer screening is simply not done.

Women in my country are very shy to expose their bodies, especially their reproductive organs, to anyone but their spouses. My aunt died of breast disease because she was so shy that she could not allow any doctor to check or see her breast. Some Cambodian women, due to the shyness, did not allow any kind of examinations over or inside reproductive organs. Many of them died later on. (#CFG1-6, Cambodian, age 50)

It is a taboo in Cambodian female world. Besides their spouses, they feel so shy to discuss female problems with male doctors. They don’t want to disclose any private issue directly to male doctors. (#CFG1-9, Cambodian, age 50)

Therefore, for married women, undressing in front of a male practitioner may not only evoke feelings of embarrassment, but it may also be associated with marital transgressions.

The motivation to adhere to culturally-based norms is due in part to close-knit communities and limited exposure to mainstream health messages. Women who had never received a mammogram until they participated in the PATH for Women project mainly attributed their lack of screening to limited knowledge of the disease and of screening guidelines. This can be attributed to a cultural prohibition against openly discussing reproductive health in their native
country. Moreover, for Cambodian women who fled during time of war, messages of breast and cervical cancer screening were likely nonexistent and such services unavailable – particularly in the rural areas. Several Cambodian women in this study were not aware of the mammogram until they arrived in the U.S. For example, one woman shared, “I have just come from Cambodia. I have never been concerned with breast exam because over there, not many women know about this. My friends told me about breast exam.” (#CFG1, 10, Cambodian, age 80)

However, despite their newfound knowledge and a willingness to get screened, many women still preferred female practitioners, as reflected by the following quotes:

Like in the case of having Pap smear, we are stressful to have it done with a male doctor. We will feel more at ease to have it done with a female doctor as planned. I believe that it is the same for all women. (#TFG1-12, Thai, age 52)

With female doctor, I am not shy and I feel very confident when the health navigator is standing nearby. She told me in detail whatever doctor said. I, however, prefer female doctor. (#CFG1-6, Cambodian, age 50)

B. Deductive Findings

Decisional Balance (Promoters and Barriers)

According to the Transtheoretical Model, health behavior is a function of a decisional balance, or the process of weighing the pros and cons of the behavior. The vast majority of women in this study were fairly knowledgeable about breast cancer, and were aware that the benefit of a mammogram is early detection. Women noted that:

Breast exam, in general, is quite important for women. I am much concerned. I know that Cambodian people are working in this department. I talked with my friend…so that she can help me with an appointment. The worker (on breast health) explained to me in detail about the consequences that could happen to breast if unchecked. (#CFG1-12, Cambodian, age 47)

I had never thought that breast could be risky for all women. Detailed explanation on breast health made me aware so now I have to get breast exam every year.
Before, I did not know what mammogram is. Now, I know that I could have breast cancer undetected. (#CFG1-6, Cambodian, age 50)

Breast cancer knowledge among women in this study can be attributed to targeted outreach and education through Public Service Announcements (PSAs) or by CHNs, who reached out to women directly via telephone and/or home visits. Therefore, this finding may not be representative of all Cambodian and Thai women in Southern California. Several Thai women indicated that they received information about screening by word of mouth from friends or from women they met at cultural events. One Thai woman indicated that health information is typically shared at cultural events, such as religious festivals at local temples. Two other Thai women agreed and said that they also heard about the PATH for Women project from other women in their community who worship at the same temple.

For the focus group participants, the personal and social costs of screening include helplessness, frustration, and embarrassment. Limited English fluency created feelings of helplessness for Cambodian women, as many did not know where to go for breast health services and were unable to communicate with practitioners. Thai women in the study expressed feelings of frustration because although many possessed high levels of self-efficacy to take care of their health and were knowledgeable of breast cancer and the benefits of screening, they were unable to effectively navigate the U.S. healthcare system or communicate with practitioners. Shyness about exposing their bodies to male practitioners prohibited many women in the study from seeking breast health services. This is particularly true for older and more recent immigrant women in the study.

For Thai women in the focus group interviews, imposition on friends or family is another cost of screening. Clinics were often located far from their homes or place of employment, and
women who are unable to drive had to ask friends or family for transportation. As several Thai women noted above, they often have had to rely on adult children for transportation to these clinics in the past. However, several women also expressed that their children are often busy working, so they frequently had to wait until their children were available. Long wait times at overcrowded clinics serve as an additional barrier and have deterred several Thai women from revisiting the same clinic. One woman shared that it can take up to half a day to be seen and another woman expressed that she often gets bored while waiting. Long wait times exacerbated the reluctance of the women to ask family or friends for transportation for fear of being burdensome.

Self-efficacy

Two types of self-efficacy emerged during discussions about breast health and healthcare seeking behavior. The first type of self-efficacy was a general confidence to take care of one’s own health, and the second type was the confidence to seek female health services. Overall, Thai women in the study appeared to have higher self-efficacy than did Cambodian women, as Thai women had more confidence to take care of their health and to seek healthcare on their own compared to Cambodian women. As noted in the comment above, one Thai woman reported that she performs monthly breast self exams in the shower, and most everyone in the focus group agreed that it is important to take care of one’s own health.

More Thai women than Cambodian women expressed having confidence to seek healthcare or breast health services, and did so on their own. One Thai woman underscored the importance of having confidence to ask questions to take better care of one’s reproductive health by saying, “If we don’t know and are afraid to ask questions, we won’t know how to take care or
Another Thai woman shared that she is not afraid to ask sensitive questions because she knows that knowledge is important. One Cambodian woman shared that she gets screened for breast and cervical cancer regularly to take care of her own health despite knowing that it is a cultural taboo to discuss female health concerns with male practitioners (#CFG1-9, age 50). Another Cambodian woman was aware of the additional risks of having breast implants and shared that she seeks breast health services every six months because she has had a breast augmentation (#CFG1-1, age 57). Most notably, most Cambodian women expressed that their confidence to seek breast health services was the result of the CHN.

Breast exam is so easy for me thanks to the health navigator who filled out the form, making appointment, interpretation, gave clear and detailed explanation pertaining to breast care. (#CFG1-11, Cambodian, age 50)

“We need help”

As suggested by the themes that emerged from the data, the low rates of mammogram utilization among Cambodian and Thai women in this study were not due to lack of disease knowledge, but rather structural and language barriers. A vast majority of Cambodian and Thai women indicated that medical interpreters provide a critically needed service in their community, particularly for older women. This point was made when asked what would make it easier to get breast health services.

The women in the community need health navigators to help for translation, we cannot go to see doctor without the health navigator. We would like to request continuance of this [PATH for Women] program and to provide health navigators to help with translation. We must have health navigators to work for women’s health and problems. (#CFG2-3, Cambodian, age 59)
An interpreter is an issue. We don’t have knowledge about the interpreter. The healthcare practitioners should not only give us the advices. We should be able to ask them questions as well whether we can do this or that, not just listen to them. We should be able to ask them what we can do, not just for them to advise us. (#TFG1-2, Thai, age 76)

When asked what other services were helpful to them besides interpretation, both Cambodian and Thai women expressed that transportation provided by the CHN was very helpful, since many women were unable to drive. However, women in the study were not aware that CHNs were not required to provide transportation, but did so as it was a significant barrier for women in the community. Upon realizing this, Thai women suggested holding free screening events at temples more frequently. Two other women agreed while a third woman suggested that mobile units should offer other preventive services besides mammograms, such as Pap tests, and blood pressure, glucose, and cholesterol screenings. Several Thai women expressed that they would rather receive a mammogram at a mobile unit than have to wait at an overcrowded community clinic. Thai women in the study agreed that mobile units are convenient for individuals who have to work during regular clinic hours.

What makes it easier for us is to provide us with the mobile screening at Wat Thai because we don’t have to take off work as it offers services on Saturday and Sunday which is convenient for us. (#TFG2-2, Thai, age 57)

Interestingly, insured women in the focus groups also preferred mobile mammography units due to the long wait for insurance companies to approve physician referrals. One woman asked the focus group facilitator if she was able to get screened at a mobile mammography unit despite being insured. The focus group facilitator suggested that she contact the PATH CHN regarding eligibility.
Women listed several skills that reflected how navigation helped Cambodian and Thai women access breast health services and the amount of appreciation women had for their navigator. PATH for Women navigators served as cultural-brokers, interpreters, and provided logistical assistance, including scheduling appointments, making reminder telephone calls, and driving women to and from appointments. They also provided encouragement and emotional support. The quotes below best reflect the feelings women had toward their navigators:

The health navigator acted as a bridge. She told the doctor what I need and told me what doctor said. The health navigator is very useful to me. (#CFG1-5, Cambodian, age 55)

I’m so thrilled with health navigator, she always call me to remind me about an appointment and also about the annual exam. I am very thankful for my health navigator. (#CFG2-3, Cambodian, age 59)

She made us feel warm and comfortable just like going with the children or grandchildren. (#TFG1-11, Thai, age 48)

She makes us feel brave. (#TFG2-3, Thai, age 60)

Data from the focus group interviews suggest that bad experiences from previous attempts to access care on their own prevented many women from seeking breast health services again without help from a CHN, regardless of self-efficacy or intention to be screened. For example, a 52 year-old Cambodian woman noted that she witnessed the consequences of undetected cancer.

In Cambodia, I myself saw a woman who refused to have her genitals examined and died. (#CFG1-8)
However, when asked why she has not received a Pap test prior to participating in the PATH for Women project, she explained,

I don’t want any checkup at any other healthcare center where there is no health navigator. It will be very hard for me to communicate with care provider. I don’t understand English. (#CFG1-8)

Study participants indicated that CHNs helped explain cultural beliefs and, at times, requested a female practitioner on behalf of the patient. When women had no choice but be seen by a male practitioner, having the CHN present during the examination made women feel more at ease. Therefore, without navigation services provided by the PATH for Women project, many women would not have been able to access breast health services.
CHAPTER EIGHT: DISCUSSION OF RESULTS

A. Discussion of Quantitative Results

Table 23 presents the research questions and the key findings from the quantitative portion of this study. With the exception of Thai women in Southern California, results indicate that mammogram adherence among women in this study was lower than the national average of 67.1%. The findings from this study highlight the importance of conducting stratified analyses.

Table 23. Research Questions and Key Findings of Quantitative Analysis

<table>
<thead>
<tr>
<th>RESEARCH QUESTION</th>
<th>FINDINGS</th>
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| 1. What are the individual, social, and environmental level predictors of breast and cervical cancer screening adherence among Cambodian and Thai women in Northern and Southern California? | **Northern California Cambodian**  
Mammogram: Years in the U.S., Belief in karma  
Pap test: Age, Information Exposure  
**Southern California Cambodian**  
Mammogram: Knowledge, Belief in karma  
Pap test: Knowledge, Belief in karma  
**Northern California Thai**  
Mammogram: Years in the U.S., Belief in karma, health insurance, Information exposure  
Pap test: Knowledge, Health insurance, Transportation, Information exposure  
**Southern California Thai**  
Mammogram: Years in the U.S., Knowledge, Health insurance, Social support  
Pap Test: Knowledge, Age, Marital status |
| 2. Is behavioral intention associated with mammogram for Cambodian and Thai women in Northern and Southern California? | **Cambodian**  
North | South  
No | No  
**Thai**  
North | South  
No | Yes |
to identify group-specific predictors of mammogram and Pap test adherence. The negative effect of cost burden on mammogram adherence among Cambodian women in Northern California may be attributed to a limited number of mobile mammography units at cultural events. As previously noted, significantly more Cambodian women in Northern California were uninsured compared to women in Southern California. Therefore, without targeted outreach (i.e., free screening by mobile mammography units) or health insurance coverage, women in Northern California would have to pay out of pocket for mammograms. In the absence of symptoms, these women might view mammograms as unnecessary, particularly if they have competing priorities.

Number of years in the U.S. was a significant predictor of mammogram adherence for Cambodian in Northern California and for both Thai women in Northern and Southern California. Women who have been in the U.S. longer may be more familiar with the U.S. healthcare system and, therefore, are able to better navigate breast health services, including free or low-cost screening available to the mainstream population. Higher rates of mammogram adherence among Thai women in Southern California may be attributed to targeted outreach, such as education and navigation by PATH for Women CHNs. Additionally, Southern California is home to the largest population of both groups of women and as such, there may be more in-language social and medical resources compared to Northern California. For example, mobile mammography units have been a common sight at cultural and community events and are a source of breast healthcare for many Cambodian and Thai women due to community organization efforts. As events are typically held locally and on weekends, and with bilingual and bicultural staff, women without transportation and those who do not speak English very well can still access these services. Therefore, the finding that English fluency, employment status,
and transportation did not significantly predict mammogram adherence for Cambodian and Thai women in Southern California was not at all surprising. Interestingly, these factors also did not predict mammogram adherence for women in Northern California. This finding may be due in part to similar ethnic specific clinics that exist in the San Francisco Bay Area, where the surveys were administered for these groups.

While mobile mammography units provide screening for uninsured women, not all women are able to take advantage of these services. Lack of health insurance coverage remains a significant barrier to screening for Thai women in Southern California. As previously noted, a significant number of Thai women in Southern California are uninsured compared to their counterparts in Northern California. Additionally, preliminary analyses showed that a majority of employed Thai women in the south were employed in the service industry (e.g., restaurant workers, massage therapists, etc.). This type of employment may require women to work on weekends and, therefore, are unable to access cancer screening at cultural events. As a result, employed women may need health insurance to visit medical clinics during the week. It is important to note that although a large proportion of Thai women in this study were employed, many still lack health insurance because they are often employed at very small businesses that do not offer health insurance coverage. These women are referred to as the “working poor”, such that they earn too much to qualify for public health insurance, yet they are not able to afford to pay out-of-pocket for individual health plans.

Knowledge of breast and cervical cancer was a significant predictor of mammogram adherence for both Cambodian and Thai women in Southern California, but not for their counterparts in Northern California. Yet, as results of the univariate analyses indicate (Table 2), Cambodian and Thai women in Southern California are significantly more disadvantaged than
women in the north. Therefore, a high knowledge of the benefits of early detection and of cancer etiology may be especially needed to encourage women in the south to get screened. Interestingly, however, amount of exposure to breast and cervical cancer information was a significant predictor of mammogram and Pap test adherence for women in Northern California only. This may be attributed to PATH for Women CHNs, who provided both emotional and instrumental support to women in Southern California. Therefore, while Cambodian and Thai women in the south may have been exposed to only a few sources of breast and cervical cancer information, they were more likely to be screened due to assistance from CHNs.

Unexpectedly, belief in karma was positively associated with mammogram adherence for three out of four groups (Cambodians in Northern and Southern California, and Thais in Northern California) and for Pap test adherence for one group (Cambodians in Southern California). While previous research shows that women who believe that illness is a matter of karma are less likely to be screened than women who do not hold such beliefs (Taylor, Schwartz et al. 1999), it is possible that, in this study, a belief in karma does not act as a barrier to screening, but rather a facilitator for positive choices that will result in good karma in the future. The finding that belief in karma became positively associated with screening for Cambodian and Thai women in Northern California in Model 3 when it previously showed no significance for either group in Model 1 was unanticipated. More research is needed to explore the role of karma and cancer screening in these two groups.

In this study, social support was operationalized as having someone to talk to about cancer tests or treatment and interestingly, it was a significant predictor of mammogram adherence for Thai women in Southern California only. Focus group findings indicated that, relative to Cambodian women, Thai women had higher self-efficacy and were more proactive in
seeking health information. One Thai woman in the focus group shared that she found out about free breast cancer screening by asking a women she met at a Thai temple. Thai women in this study had higher intention to be screened than Cambodian women and, therefore, receiving information from friends and family may be what is needed to overcome structural barriers.

Pap tests are not as accessible as mammograms, since they are not typically provided by mobile units at health fairs and cultural events. Therefore, Cambodian and Thai women would have to go to medical clinics for cervical cancer screening, making it considerably more difficult for women with limited English fluency and who lack health insurance and transportation. This may explain why Pap test adherence among all four groups of women was lower than the national average of 78.3%. However, English fluency was not a significant predictor of screening for any of the four groups of women and health insurance coverage and transportation were significant predictors for Thai women in Northern California only. While uninsured women in California are eligible for free breast and cervical cancer screening through the EWC program, Thai women in the north may not take part in these services for several reasons: 1) they may earn too much to qualify for the program, 2) there may be limited language-concordant practitioners, and 3) EWC practitioners may be located far from the woman’s home or workplace.

Knowledge of breast and cervical cancer was a significant predictor of Pap test adherence for Cambodian women in Southern California and Thai women in Northern California. It was marginally significant for Thai women in Southern California in Model 1 (p=.050), but became significant for this group in the comprehensive model. The finding that women with increased disease knowledge and positive attitudes toward cancer screening are more likely to be adherent with Pap test utilization is not surprising given some misconceptions regarding the exam. For
example, the belief that only sexually active women are at risk for cervical cancer is common and found to be associated with cervical cancer screening for both Cambodian and Thai women in a number of studies (Taylor, Jackson et al. 2000; McGarvey, Clavet et al. 2003; Tsui and Tanjasiri 2008). Additionally, fear and embarrassment have consistently been found to be significant barriers to Pap test utilization in many Asian American subgroups due to the invasive nature of the exam (Tu, Yasui et al. 2002; Lee-Lin, Menon et al. 2008; Fang, Ma et al. 2011; Ma, Gao et al. 2013). As such, women may need more information on the benefits of early detection and on cancer risks to overcome individual level barriers.

Age was a significant predictor of Pap test adherence for both Cambodian women in the north and Thai women in the south. Interestingly, however, older Thai women were more likely to be screened (age 60 and above) than younger women. This finding may be attributed to lack of health insurance among younger women and Medicare coverage for women age 65 years and over. Since a large majority of Cambodian women in this study had health insurance coverage, the finding that younger women were more likely to be screened than older women may be attributed to more fear and embarrassment among the latter group.

Focus group findings showed that Cambodian women in Southern California were more reluctant to talk about female reproductive health or to be screened by male practitioners compared to Thai women in Southern California. Therefore, it was not surprising that having a female physician was a significant predictor of Pap test adherence for Cambodian women in the south only. Interestingly, however, physician gender was no longer significant in the comprehensive model with both individual and environmental level variables. Marital status was a significant predictor of Pap test adherence for Thai women in Northern and Southern California, likely due to the common belief that only sexually active women need to be screened.
Given that premarital sex is a cultural taboo, single women may be reluctant to get screened, regardless of sexual activity. However, marital status was no longer significantly associated with screening for Thai women in Northern California in the comprehensive model.

Focus group findings indicate that both Cambodian and Thai women in this study experienced a considerable number of barriers that made it difficult to act on their intentions and access breast health services without assistance from a PATH for Women CHN. The finding that intention at baseline was associated with mammogram adherence at follow-up for both Cambodian and Thai women in Southern California and not for women in Northern California was not at all surprising. The PATH for Women Project was implemented in Southern California only and, therefore, Cambodian and Thai women in the south received extensive outreach, education, and navigation services. Cambodian women in the focus group interviews shared that PATH for Women CHNs played an essential role in mammogram utilization and without assistance from navigators, Cambodian women would not have been able to access breast health services, regardless of intention to be screened. This is evident among Cambodian and Thai women in Northern California, both of whom had higher intention at baseline than Cambodian women in the south, yet intention did not significantly predict mammogram adherence for either group. This is likely attributed to the number and magnitude of barriers to healthcare and lack of assistance to overcome these barriers in Northern California.

B. Discussion of Qualitative Results

Cambodian women in the focus group interviews had lower intention to be screened than Thai women, a finding that was confirmed by quantitative analysis. The most notable difference between the two groups of women is how each felt about the inability to effectively
communicate with healthcare practitioners. Thai women in the focus group interviews recognized the importance of patient/provider communication and viewed a physician’s recommendation as critical in their decision to be screened. A vast majority of Thai women in the focus group interviews possessed high levels of self-efficacy to take care of their health and many were aware of the benefits of early detection prior to participating in the PATH for Women project. However, they felt frustrated because they were unable to ask questions or explain their health concerns in detail without an interpreter. Cambodian women, on the other hand, reported feelings of helplessness. Prior to participating in the PATH for Women project, few Cambodian women were aware of mammograms and many did not know where to go for healthcare because of the inability to speak English.

Qualitative findings indicated that older women in this study were more reluctant to be screened. This may be attributed to a higher degree of modesty, limited English fluency, and lack of transportation. As such, PATH for Women CHNs had to put in a considerable amount of time and effort to assist older Cambodian women. For example, one CHN reportedly made six visits to a Cambodian woman’s house before she agreed to get a mammogram (Nguyen, Tanjasiri et al. 2008).

Cambodian and Thai women differed in the type and amount of assistance needed to access breast health services. Thai women had higher intention and self-efficacy than Cambodian women and, therefore, did not require as much encouragement to be screened. Instead, Thai women in this study needed logistical and functional assistance, such as help with scheduling appointments, transportation, and interpretation. More Cambodian women than Thai women reported needing CHNs to feel comfortable and confident during a mammogram. Several Cambodian women in the focus group interviews stated that they did not know anything
about reproductive health prior to receiving information from the CHN. Therefore, CHNs not only had to provide logistical assistance, but also breast health education and emotional support in order to successfully navigate Cambodian women. Findings from the qualitative portion of this study revealed that CHNs played a vital role in breast cancer screening for both groups of women, regardless of intention to be screened, but the types of assistance differed. Table 24 presents a list of barriers and the types of assistance CHNs provided to Cambodian and Thai women in the PATH for Women project.

Table 24. Cultural and Logistical Barriers and Type of Services by Group

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Barriers</th>
<th>Type of Assistance Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodian</td>
<td>Thai</td>
<td>Limited English fluency</td>
<td>CHN provided interpretation services and assisted with paperwork</td>
</tr>
<tr>
<td>✔</td>
<td>✔</td>
<td>Clinic distance/Lack of transportation</td>
<td>CHN drove women to appointments</td>
</tr>
<tr>
<td>✔</td>
<td>✔</td>
<td>Limited disease knowledge</td>
<td>CHN provided one-on-one breast cancer education</td>
</tr>
<tr>
<td>✔</td>
<td>✔</td>
<td>Unfamiliarity with U.S. healthcare system/Don’t know where to go for screening</td>
<td>CHN scheduled appointments, made reminder phone calls, and called to follow-up to ensure that women received results of the mammogram</td>
</tr>
<tr>
<td>✔</td>
<td>✔</td>
<td>Extreme Modesty/Embarrassment</td>
<td>CHN remained in room with women and provided emotional support during exam; acted as a cultural broker</td>
</tr>
<tr>
<td>✔</td>
<td>✔</td>
<td>Long wait times at clinics</td>
<td>CHN kept women company; women did not feel guilty as they would with family members because many felt that it is the CHN job to accompany them</td>
</tr>
<tr>
<td>✔</td>
<td></td>
<td></td>
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</tbody>
</table>

140
An examination of culturally-based norms and mainstream American norms regarding reproductive health revealed that both sets of norms influenced mammogram utilization for Cambodian and Thai women in this study. Both groups of women shared feelings of extreme modesty and the need to adhere to cultural expectations of female decorum. However, it appeared that culturally-based norms had a larger influence on Cambodian women than Thai women. For example, a large majority of Cambodian women in the focus group interviews shared that they were too shy to seek reproductive health services, particularly from male practitioners. Although many Thai women also had feelings of modesty, the benefits of early detection outweighed embarrassment for this group. Therefore, the costs of screening for Thai women related to systems barriers, such as clinic distance and long wait times. Nevertheless, more research is needed to more closely examine the concept of female modesty in Cambodian and Thai women to identify underlying factors on which it is based and highlight areas that can be addressed in health interventions.

While both Cambodian and Thai women reported similar barriers to healthcare, the former group had lower self-efficacy to take care of one’s health and to navigate the healthcare system. Low self-efficacy was a significant barrier to mammogram screening among Cambodian women in the focus group interviews, likely due to migration history. As noted previously, a large majority of Cambodians arrived in the U.S. as war refugees and most were from rural areas of the country. These individuals had lower education levels and many are unfamiliar with the Western biomedical model, including the concept of prevention. Moreover, a large number of Cambodians continue to suffer high rates of psychiatric disorders as a result of their previous traumatic experiences, such as rape, torture, and near-death starvation (Marshall, Schell et al. 2005).
Results from the qualitative portion of this study indicate that both individual and environmental factors influence the decision-making process for Cambodian and Thai women in this study. At the individual level, extreme modesty played a large role in a woman’s decision to be screened, where the embarrassment of having to undress in front of male practitioners was viewed as a cost of getting a mammogram. This was true for both Cambodian and Thai women in this study. Clinic distance and long wait times were additional environmental level costs of screening for Thai women. While they did not directly serve as barriers to screening, treatment was delayed, as Thai women were reluctant to ask for help (e.g., interpretation, transportation) from family and friends when appointments were at overcrowded clinics or at clinics that were far from home. Both groups of women were aware of the benefits of screening (i.e., early detection and timely treatment). However, individual and environmental level barriers were too difficult to overcome and women indicated that they needed assistance in order to get screened. PATH for Women CHNs provided emotional and instrumental support for Cambodian and Thai women in this study, thereby minimizing the barriers to screening and modifying a woman’s decisional balance to one where the costs of screening are outweighed by the benefits of early detection.

C. Data Triangulation

Cambodian

Key findings from the deductive and inductive portion of this study are presented in Table 25. The comprehensive model in the quantitative portion of this study revealed that number of years in the U.S. was a significant predictor of mammogram adherence for Cambodian women in Northern California and that knowledge of breast and cervical cancer was
a significant predictor for Cambodian women in Southern California. This was confirmed by focus group findings, as a large majority of Cambodian women were unfamiliar with the mammogram and with the U.S. healthcare system prior to receiving breast cancer education and assistance from the PATH for Women CHN.

The finding that belief in karma was positively associated with mammogram adherence for Cambodian women in Northern and Southern California was not supported by qualitative findings, as none of the women in the focus group interviews shared such traditional beliefs about cancer. However, such questions were not on the focus group guide and focus group leaders were not prompted to explore these areas. As such, more qualitative research is needed to explore the role of karma in breast cancer screening among Cambodian and Thai women.
Table 25. Key Findings of Data Analysis and Focus Group Interviews, **Cambodian** and **Thai** women age 40 and over (table continues)

<table>
<thead>
<tr>
<th>Research Question/ Theoretical Construct</th>
<th>Quantitative Findings</th>
<th>Qualitative Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Does behavioral intention predict mammogram adherence among Cambodian and Thai women?</strong></td>
<td><strong>Behavioral intention (Theory of Reasoned Action/Planned Behavior)</strong></td>
<td><strong>Cambodian</strong> and <strong>Thai</strong> women experience individual, cultural, and environmental barriers to breast cancer screening. Both groups had limited English fluency and lacked transportation.</td>
</tr>
<tr>
<td><strong>Quantitative Findings</strong></td>
<td>• <strong>Thai</strong> women had higher intention to be screened at baseline than Cambodian women.</td>
<td>• <strong>Cambodian</strong> and <strong>Thai</strong> women had lower self-efficacy to take care of their health and less disease knowledge than <strong>Thai</strong> women.</td>
</tr>
<tr>
<td></td>
<td>• Intention significantly predicted mammogram adherence for <strong>Thai</strong> women in Southern California only</td>
<td>• More <strong>Cambodian</strong> than <strong>Thai</strong> women expressed embarrassment and shyness of being screened.</td>
</tr>
<tr>
<td></td>
<td>• Intention did not predict mammogram or Pap test adherence for <strong>Cambodian</strong> women in Northern or Southern California, or for <strong>Thai</strong> women in Northern California</td>
<td>• The fact that intention did not predict mammogram adherence for either group of women is likely attributed to the number and magnitude of barriers revealed in the focus group interviews.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research Question/ Theoretical Construct</th>
<th>Quantitative Findings</th>
<th>Qualitative Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2. What are the individual and environmental level predictors of mammogram adherence for Cambodian and Thai women?</strong></td>
<td><strong>Mammogram Adherence (Social Ecological Model)</strong></td>
<td>**Language, transportation, and cultural expectations to adhere to female decorum were significant barriers for <strong>Cambodian</strong> and <strong>Thai</strong> women.</td>
</tr>
<tr>
<td></td>
<td><strong>Cambodian</strong></td>
<td><strong>Older Cambodian and Thai women were more likely experience these barriers than younger women.</strong></td>
</tr>
<tr>
<td></td>
<td><strong>North</strong></td>
<td><strong>Societal</strong></td>
</tr>
<tr>
<td></td>
<td><strong>South</strong></td>
<td><strong>Belief in Karma</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Years in U.S</strong></td>
<td><strong>Belief in Karma</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Knowledge</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Belief in Karma</strong></td>
<td></td>
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<td></td>
<td><strong>Belief in Karma</strong></td>
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</tbody>
</table>
Table 25 (continued). Key Findings of Data Analysis and Focus Group Interviews, **Cambodian** and **Thai** women age 40 and over

<table>
<thead>
<tr>
<th>Research Question/ Theoretical Construct</th>
<th>Quantitative Findings</th>
<th>Qualitative Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. What are the individual and environmental level predictors of mammogram adherence for Cambodian and Thai women?</td>
<td><strong>Mammogram Adherence</strong>&lt;br&gt;Thai&lt;br&gt;North</td>
<td><strong>Thai</strong> women relied on adult children to take them to medical appointments.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Thai</strong> women had higher self-efficacy to take care of their health</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Thai</strong> women recognized the importance of effective patient/provider communication, suggesting that a physician’s recommendation holds significant weight for this group of women.</td>
</tr>
<tr>
<td></td>
<td><strong>Pap Test Adherence</strong>&lt;br&gt;Cambodian&lt;br&gt;North</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td><strong>Thai</strong>&lt;br&gt;North</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N/A</td>
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*Levels of Behavioral Influence (Social Ecological Model)*

- **Intrapersonal**
- **Organizational**
- **Community**
- **Societal**
<table>
<thead>
<tr>
<th>Research Question/ Theoretical Construct</th>
<th>Quantitative Findings</th>
<th>Qualitative Findings</th>
</tr>
</thead>
</table>
| 3. What role do CHNs play in accessing breast screening services for these women? | N/A | • Provided one-on-one breast cancer education  
• Scheduled mammogram appointments and made reminder telephone calls  
• Drove women to appointments  
• Provided interpretation services and assisted with paperwork  
• Remained in the examination room and provided emotional support  
• Served as a cultural broker between practitioner and patient/family  
• Followed up to ensure that women received mammogram result |
| 4. What are the social, cultural, and environmental factors that influence the decision-making process for Cambodian and Thai women in Southern California?  
**Decisional Balance (Transtheoretical Model)** | N/A | • Costs and benefits of screening were similar for Cambodian and Thai women  
• Costs of screening were related to individual (frustration and embarrassment due to limited English fluency and extreme modesty) and environmental (transportation, clinic distance, long wait times) factors  
• Benefits of screening were early detection and treatment of disease |
Table 25 (continued). Key Findings of Data Analysis and Focus Group Interviews, Cambodian and Thai women age 40 and over

<table>
<thead>
<tr>
<th>Research Question/ Theoretical Construct</th>
<th>Quantitative Findings</th>
<th>Qualitative Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. What are the social, cultural, and environmental factors that influence the decision-making process for Cambodian and Thai women in Southern California? Decisional Balance (Transtheoretical Model)</td>
<td>N/A</td>
<td>• Intra- and Inter-group differences in decisional balance, or factors affecting the decision-making process, were observed. Because Cambodian women appeared to have less disease knowledge than Thai women, culturally-based norms (i.e., modesty) played a larger role in breast cancer screening for the former group. The benefits of early detection outweighed the costs of embarrassment for Thai women in this study.</td>
</tr>
</tbody>
</table>
Thai

Number of years in the U.S. was a significant predictor of mammogram adherence for both Thai women in Northern and Southern California. While focus group results showed that Thai women were generally more knowledgeable about breast and cervical cancer compared to Cambodian women, a large majority of Thai women in Southern California did not know whom to call or where to go for breast cancer screening. Therefore, longer time spent in the U.S. may result in more knowledge of available resources, such as free cancer screening as part of the EWC program, or in greater familiarity with the U.S. healthcare system. Interestingly, quantitative findings revealed that health insurance coverage was positively associated with mammogram adherence for Thai women in both Northern and Southern California, even though a large majority of Thai women in the focus group interviews indicated that they received screening from mobile mammography units. In fact, one insured Thai women preferred to be screened at a Thai temple because the referral process through her primary care physician was too lengthy.

Social support, as defined in this study as having someone to talk to about cancer tests and treatment, was a significant predictor of mammogram adherence for Thai women in Southern California and this was supported by qualitative findings. Several Thai women in the focus group interviews indicated that they received information about breast cancer screening from women they met at the Thai temple. Findings from the quantitative portion of this study showed that Thai women had higher intention to be screened and were generally more knowledgeable about breast and cervical cancer than Cambodian women. Therefore, the major barriers to screening may be systems-related and receiving information about where to go for a
mammogram may be the only assistance needed in order to get screened. This finding was supported by qualitative data, which showed that Thai women in the focus group interviews had greater disease knowledge and higher self-efficacy than Cambodian women.

A large majority of both Cambodian and Thai women in the focus group interviews shared that limited English, lack of transportation, and embarrassment were significant barriers to breast cancer screening. However, the discrepancy between quantitative and qualitative findings on the lack of effect of English fluency, transportation, and physician gender on screening may be due in part to targeted outreach. For example, mobile mammography units at cultural events make it considerably easier for Cambodian and Thai women in Southern California to access screening, since women often attend events with family and friends, thereby eliminating the need for transportation. Additionally, mobile units are typically staffed by female mammogram technicians and bilingual staff or volunteers to help interpret and complete paperwork. Therefore, it is likely that women in the focus group interviews were referring to breast cancer screening services at medical facilities when speaking of the barriers above.

D. Strengths and Limitations

Several study limitations should be considered when interpreting these findings. First, the sampling strategy of baseline recruitment of study participants relied on a stratified convenience sampling strategy. Therefore, women in this study are not representative of all Cambodian and Thai women and, as such, study findings are not generalizable to women in other parts of the U.S. Second, because sampling was stratified to allow for representation of four demographic characteristics (age, socioeconomic status, English fluency, and income), Cambodian and Thai women in this study are not comparable to national samples (i.e., Census
data). Third, social desirability bias may be another limitation of this study because face-to-face interviews may have led to an overestimation of mammogram and Pap test adherence. Pap test adherence may especially be overestimated because research shows that women with children tend to equate reproductive health services during prenatal care with specific Pap tests (Yi 1996). However, the PATH for Women project provided a detailed description of both screening tests to try to circumvent the common misconceptions of these two tests. Nevertheless, the potential confusion does not affect the results of this study, as the outcome of interest was adherence and not lifetime screening. Lastly, an important limitation is the relatively small sample size of each of the four groups of women in this study, where a lack of statistical power may have resulted in the inability to find significant predictors.

The qualitative portion of this study has several limitations as well. One limitation is related to the number of focus groups for each group of women. Because only two focus groups were conducted, findings may not have reached saturation. Conducting more focus groups discussions could have revealed additional barriers to breast cancer screening and factors that influence the decision-making process for Cambodian and Thai women in Southern California. Another limitation of the qualitative portion of this study is the lack of focus group data on Cambodian and Thai women in Northern California. As a result, triangulation of quantitative and qualitative data was not possible for women in this region. Lastly, an issue of concern in the qualitative portion of this study is that focus group interview transcripts were coded by only one coder. This may have resulted in subjective bias and does not allow for testing of inter-coder agreement. Again, protocol steps were taken to verify coding in the translated version, but this may not have been sufficient.
Despite the concerns described above, the study has several strengths that outweigh its limitations. This study is the first to use a mixed methods approach to better examine social and environmental predictors of mammogram and Pap test adherence among Cambodian and Thai women. The second strength of this study is the disaggregation of data by ethnicity and region. Cambodian and Thai women have historically been aggregated as Asian Americans despite having different migration history and demographic profiles. Because of these differences, separate models were created for this study and each was tailored to the unique characteristics of each group. Performing a separate analysis for each group of women allowed for the identification of individual and environmental level predictors of four geographically different communities and as anticipated, predictors of mammogram and Pap test adherence varied between each group. Third and finally, the qualitative portion of this study revealed that behavioral intention is a poor indicator of actual behavior when working with disadvantaged communities and highlighted the importance of CHNs in breast cancer screening among Cambodian and Thai women in Southern California.
CHAPTER NINE: CONCLUSION AND IMPLICATIONS

Cancer disproportionately affects Asian Americans despite the availability of effective screening methods that allow for early detection and treatment. Cancer is the number one cause of death of Asian Americans, and Asian Americans have the lowest screening rates for cancer of all ethnic groups. Unless significant effort is made to understand and address barriers to cancer screening, rates of cervical cancer and late-stage breast cancer will continue to increase as the largely immigrant population westernizes and ages. More recent immigrant women, such as Cambodians and Thais, are particularly at risk for breast and cervical cancer, as studies show that cancer risk increases with time spent in the U.S. (Ziegler, Hoover et al. 1993; Gomez, Noone et al. 2013), due in part to changes in diet and lifestyle. Additionally, recent immigrant women are more likely to be culturally- and linguistically-isolated, and face significant barriers to cancer screening than women who have lived in the U.S. for a longer length of time.

This study was conducted with three goals in mind. The first goal of this study was to examine the association between behavioral intention and mammogram adherence among Cambodian and Thai women in Northern and Southern California and identify competing individual, cultural, and environmental factors that influence the decision-making process for these women. The second goal was to evaluate an adapted socio-ecologic conceptual model of breast and cervical cancer screening that integrates the cultural aspects of breast and cervical cancer screening. Finally, the third goal was to take a mixed methods approach that integrated cultural factors and socio-historical contexts that were specific to each community to delve more
deeply into the community perspective and generate population-specific data for Cambodian and Thai women in Southern California. To achieve these three goals, quantitative and qualitative data from the PATH for Women project was used to explore community-specific barriers encountered by Cambodian and Thai women when accessing breast health services in Southern California, and examined the types of assistance needed to overcome these barriers. Results from this study contribute to the literature on breast and cervical cancer among immigrant women, and expands upon existing research on Cambodian, and particularly, is the first study of breast and cervical cancer screening among Thai American women. A summary of findings of this study is provided in Table 26.
<table>
<thead>
<tr>
<th>RESEARCH QUESTION</th>
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<tbody>
<tr>
<td><strong>QUANTITATIVE</strong></td>
</tr>
</tbody>
</table>

1. **What are the individual, social, and environmental level predictors of breast and cervical cancer screening adherence among Cambodian and Thai women in Southern California?**

- **Cambodian**
  - **Mammogram**
    - Knowledge of breast and cervical cancer
    - Belief in karma
  - **Pap Test**
    - Knowledge of breast and cervical cancer
    - Belief in karma

- **Thai**
  - **Mammogram**
    - Number of years in the U.S.
    - Knowledge of breast and cervical cancer
    - Social support
  - **Pap Test**
    - Age
    - Education level
    - Marital status

2. **What are the inter-regional differences and similarities with regards to individual level predictors of breast and cervical cancer screening adherence among Cambodian and Thai women?**

<table>
<thead>
<tr>
<th></th>
<th><strong>Cambodian</strong></th>
<th><strong>North</strong></th>
<th><strong>South</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mammogram</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Years in the U.S.</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>• Belief in Karma</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td><strong>Pap Test</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Information Exposure</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>• Age</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th><strong>Thai</strong></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Mammogram</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Years in the U.S.</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>• Health Insurance</td>
<td>YES</td>
<td>YES</td>
<td></td>
</tr>
<tr>
<td>• Information Exposure</td>
<td>YES</td>
<td>NO</td>
<td></td>
</tr>
</tbody>
</table>
Table 26 (continued).  Research Questions and Summary of Findings

<table>
<thead>
<tr>
<th>RESEARCH QUESTION</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>QUANTITATIVE</strong></td>
<td></td>
</tr>
<tr>
<td>2. What are the inter-regional differences and similarities with regards to individual level predictors of breast and cervical cancer screening adherence among Cambodian and Thai women?</td>
<td></td>
</tr>
<tr>
<td>Pap Test</td>
<td></td>
</tr>
<tr>
<td>• Knowledge</td>
<td>YES</td>
</tr>
<tr>
<td>• Marital Status</td>
<td>NO</td>
</tr>
<tr>
<td>• Information Exposure</td>
<td>YES</td>
</tr>
<tr>
<td>• Transportation</td>
<td>YES</td>
</tr>
<tr>
<td>3. Is behavioral intention associated with mammogram and Pap test adherence among Cambodian and Thai women in Northern and Southern California?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intention significantly predicted mammogram adherence for <strong>Thai</strong> women in <strong>Southern California</strong> only.</td>
</tr>
<tr>
<td><strong>QUALITATIVE</strong></td>
<td></td>
</tr>
<tr>
<td>1. What are the ethnic-specific, culturally-based norms and systems-related factors that influence the decision-making process for Cambodian and Thai women in Southern California?</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Cambodian</strong> and <strong>Thai</strong> women listed similar personal and social costs of screening, including frustration with the inability to communicate with practitioners and embarrassment of the exam</td>
</tr>
<tr>
<td></td>
<td><strong>Thai</strong> women reported the added cost of imposition on friends and family due to clinic distance and long wait times</td>
</tr>
<tr>
<td>2. What role do CHNs play in breast cancer screening among Cambodian and Thai women in Southern California?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provided one-on-one breast cancer education</td>
</tr>
<tr>
<td></td>
<td>Scheduled mammogram appointments and made reminder telephone calls</td>
</tr>
<tr>
<td></td>
<td>Provided transportation to appointments</td>
</tr>
<tr>
<td></td>
<td>Interpreted and assisted with paperwork</td>
</tr>
<tr>
<td></td>
<td>Remained in the examination room and provided emotional support</td>
</tr>
<tr>
<td></td>
<td>Acted as a cultural broker between practitioner and patient/family</td>
</tr>
<tr>
<td></td>
<td>Followed up to ensure that women received mammogram results</td>
</tr>
</tbody>
</table>
A. Conclusion

In brief, the concept of behavioral intention was significantly associated with mammogram adherence for Thai women in Southern California only, even though both groups of Thai women had higher levels of intention to be screened than their Cambodian counterparts. This was likely due to PATH for Women CHNs, who provided assistance for Cambodian and Thai women in Southern California only. Because intention was not significantly associated with mammogram adherence for Thai women in the north indicates that having intention does not always lead to behavior change, particularly in disadvantaged communities.

The qualitative focus group findings revealed that Cambodian women appeared to have lower levels of self-efficacy and reported a general feeling of helplessness due to limited English fluency and lack of transportation. Many Cambodian women stated that they were unaware of mammograms until they were contacted by a PATH for Women CHN. In contrast, a vast majority of Thai women in the study had accessed healthcare on their own in the past and many were aware of breast cancer and the benefits of early detection prior to the PATH for Women project. Additionally, Thai women in the focus group interviews recognized the importance of taking charge of one’s health by asking necessary questions and, therefore, many felt frustrated because they were not able to communicate with providers due to a language barrier. By providing breast cancer education, interpretation services, transportation, and emotional support, CHNs reduced the number and magnitude of emotional, social, and logistical barriers. Both groups of women agreed that accessing breast health services was easier with assistance from a PATH for Women CHN.
B. Theoretical Implications

The findings outlined above support the more comprehensive theoretical framework used in this study (Figure 5). The adapted social ecological model recognizes the effects of individual factors and socio-historical context on breast and cervical cancer screening in disadvantaged communities. As such, the model includes five levels of behavioral influence to better conceptualize the barriers and facilitators of breast and cervical cancer screening in diverse communities. Additionally, the model posits that these levels of behavioral influence continually interact to affect breast and cervical cancer screening. Lastly, the model includes constructs related to social norms to allow for an in-depth look at both the interaction of Southeast Asian and European American societal norms that influence a woman’s decision to be screened.
As anticipated, quantitative findings from this study revealed that both individual and environmental factors predict breast and cervical cancer screening for Cambodian and Thai women. Notably, these predictors are specific to each community particular to its geographic location. The qualitative portion of this study revealed that culturally-based norms of not openly discussing women’s reproductive health issues and the value of female modesty were barriers to breast cancer screening for both Cambodian and Thai women in Southern California. PATH for Women CHNs conducted extensive outreach and education in both communities, thereby changing the social norms of openly discussing female reproductive health concerns. For example, several Cambodian and Thai women in this study shared that they received breast and cervical cancer information and referrals to screening services from other women during cultural events at Buddhist temples, which were sites where the PATH CHNs conducted outreach and education sessions.

Women also shared their embarrassment of the exam and reluctance to undress in front of a male practitioner. These findings indicate that while Cambodian and Thai women in the U.S. may be more open to discuss breast and cervical cancer screening, their decision to be screened is still influenced by Southeast Asian societal norms, thereby supporting the theory’s recognition of the interaction of European society norms and Southeast Asian norms in both the etiquette of practitioner/patient interactions and the decision-making process. More importantly, this study showed Cambodian and Thai women face significant barriers to screening and that behavioral intention is an insufficient study outcome for communities whose members experience individual and social and structural constraints to behavior change. As noted above, Thai women in Northern California could not adhere to recommended mammogram guidelines, despite having the intention to be screened. This is indicative of the need for assistance to
overcome individual and environmental barriers to screening. Notably, women who received mammograms in this study all required assistance from a CHN to effectively navigate the complex U.S. healthcare system.

C. Research Implications

The overall findings of this dissertation study have significant implications for how health disparities are conceptualized and addressed in diverse communities. This research recognizes and supports the model that health behavior is a function of individual, social, and environmental factors (Pasick, Burke et al. 2009; Kagawa-Singer 2012) and as such, a mixed methods approach was able to better contextualize and interpret breast and cervical cancer screening practices for Cambodian and Thai women in Southern California. Moreover, the mixed methods approach allowed for an examination of the association of behavioral intention and cancer screening, and a comparison of barriers to cancer screening for Cambodian and Thai women in Southern California. Qualitative methods used this study allowed for an examination of social norms and their influence on the decision-making process for both groups of women and as such, interpretations were made with consideration of the cultural context and environmental resources of each community.

Disaggregating data is the first step toward eliminating health disparities. As results of this study indicate, significant inter-group differences exist with respect to individual and environmental level predictors of breast and cervical cancer screening. The finding that marital status was a significant predictor of Pap test adherence for Thai women in Southern California and not for their counterparts in Northern California indicates that women in the south may need more education to debunk myths and misconceptions about cervical cancer. Furthermore, the
finding that transportation was a significant predictor of Pap test adherence for Thai women in Northern California, but not for women in Southern California, may indicate a lack of providers in that region. Cancer prevention efforts must recognize these community-specific characteristics and tailor intervention strategies accordingly to achieve positive results.

The most significant contribution that this study makes to cancer research is the operationalization of culture in health behavior studies. Culture is often viewed as a barrier in most cancer prevention studies and included in the analysis as discrete variables (Jenkins, Le et al. 1996). The conceptual framework for this study recognizes that while cultural beliefs, such as belief in karma, do influence health behavior, culture is all-encompassing and an examination of its role on health behavior needs to include factors at all levels of behavioral influence. More importantly, future cancer prevention studies need to recognize that culture is present in both European American as well as Southeast Asian society and, therefore, should not only be addressed when working with diverse communities. Instead, assessing culture to understand health behavior should be standard of practice whenever possible (Kagawa-Singer, Dressler et al. forthcoming). By integrating culture into the conceptual framework, this study was able to show that the cultural context of European American societal norms and worldview are not synchronous with diverse cultural groups and supports previous work on this topic (Kagawa-Singer, Dressler et al. forthcoming). Interventions must recognize these differences in order to effectively address barriers to screening.

D. Overall Conclusion

This dissertation underscores the need to move beyond the traditional research paradigm of using individual level health behavior theories and quantitative methods, alone and reinforces the value of using mixed paradigms and methods to better understand health behavior in order to
design more effective interventions to eliminate health disparities. This dissertation also highlights the gaps and potential oversight of the cultural and environmental factors that are required to promote and support breast and cervical cancer screening among Cambodian and Thai women in California. Health disparities are the product of both individual- and environmental-level factors. Therefore, health behavior research needs to adequately address both in order to make significant progress.
APPENDIX A: PATH for Women Baseline Survey
BREAST AND CERVICAL CANCER SCREENING KNOWLEDGE AND PRACTICE QUESTIONNAIRE

Instructions to the interviewer: Please mark a check on the line or box next to the person’s response. Except where indicated, please check off only one answer for each question. Except where indicated (special instructions for questions are in CAPITAL letters), read the question and the responses to the respondent. Words in CAPITAL letters are NOT read, while words in lowercase letters ARE read to the respondent.

If the respondent refuses to answer a question, please mark an (R)* on the left side of the question. If the respondent appears uncomfortable with the question, please mark a (U)* on the left side of the question. If the respondent seems to misunderstand or misinterpret the question, please mark an (M)* on the left side of the question.

PLEASE FILL IN THE FOLLOWING INFORMATION FOR ALL INTERVIEWS:

LOCATION OF INTERVIEW: ________________________________

INTERVIEWER: ________________________________

DATE: ____/_____/02
(MONTH/DAY/YEAR)

TIME BEGIN: ________ AM / PM       TIME END: ________ AM / PM

# MINUTES TO COMPLETE INTERVIEW: ________

INTRODUCTION – PLEASE READ TO RESPONDENT:

“Thank you for participating in this survey. Your answers will be kept strictly confidential and anonymous. No one will know who you are from your responses to this questionnaire.

Your answers are very important. Please answer each question on this survey.

We are sorry if some questions may be embarrassing, but these are all important questions and we would greatly appreciate your honest opinions, feelings, and experiences. Many (ETHNIC GROUP) women are not obtaining healthcare from a physician on a regular basis for female health issues. Therefore, we are seeking your thoughts and ideas about breast cancer and cervical cancer so we can gain a sense of how we can best meet the needs for health information and services for (ETHNIC GROUP) women.
1. DEMOGRAPHICS: “I am going to start by asking you some questions about your background. Your answers will help us know whether we are reaching women from all parts of the (ethnic-group) community. Answers will be kept strictly confidential.”

1. What is your ethnicity (ies) (if you are of mixed heritage)? (CHECK ONE)
   - _____ CAMBODIAN
   - _____ CHAMORRO
   - _____ LAOTIAN
   - _____ SAMOAN
   - _____ THAI
   - _____ TONGAN
   - _____ VIETNAMESE
   - _____ OTHER (PLEASE SPECIFY ETHNICITY (IES): ______________________)
     (INCLUDING BI-RACIAL, BI-ETHNIC, MULTI-ETHNIC E.G. VIETNAMESE/CHINESE)
   - _____ DON’T KNOW / NOT SURE

2. Where were you born? (CHECK ONE)
   - _____ UNITED STATES \(\Rightarrow\) SKIP TO QUESTION #5
   - _____ CAMBODIA
   - _____ GUAM
   - _____ LAOS
   - _____ SAMOA
   - _____ THAILAND
   - _____ TONGA
   - _____ VIETNAM
   - _____ OTHER (PLEASE SPECIFY COUNTRY: ______________________)
   - _____ DON’T KNOW / NOT SURE

3. What year did you come to the United States?
   - ____________ (YEAR)
4. What levels of education have you completed in the country where you were born? (CHECK ALL THAT APPLY)
   _____ Elementary school or equivalent (i.e. grades 1-6)
   _____ Middle school or equivalent (i.e. grades 7-8)
   _____ High School or equivalent (i.e. grades 9-12)
   _____ Vocational school
   _____ ESL/Adult School
   _____ College/University
   _____ OTHER (SPECIFY:_______________________)

5. What levels of education have you completed in the U.S? (CHECK ALL THAT APPLY)
   _____ Elementary school or equivalent (i.e. grades 1-6)
   _____ Middle school or equivalent (i.e. grades 7-8)
   _____ High School or equivalent (i.e. grades 9-12)
   _____ Vocational school
   _____ ESL/Adult School
   _____ College/University
   _____ OTHER (SPECIFY:_______________________)

6. What is your age? (in Western years) ..............................................___________________

7. What is your marital status? Are you . . .
   _____ Single
   _____ Married
   _____ Divorced
   _____ Separated
   _____ Widowed
   _____ Living as married
   _____ DON'T KNOW / NOT SURE/REFUSES TO ANSWER (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW OR REFUSES TO ANSWER.)
8. What languages do you prefer to speak? Do you prefer…

______ Only English
______ Mostly English
______ Both English and (ETHNIC LANGUAGE) equally
______ Mostly (ETHNIC LANGUAGE)
______ Only (ETHNIC LANGUAGE)

II. MEDICAL CARE: “Now I would like to ask you some questions about your medical care.” (THESE QUESTIONS PERTAIN TO WESTERN MEDICAL PROVIDERS.)

9. Where do you go for your medical care?

______ A hospital
______ A community clinic
______ A private physician’s office
______ The emergency room
______ OTHER (PLEASE SPECIFY: ___________________)

10. In what language primarily are medical services provided to you at/by ______________ (ANSWER GIVEN IN QUESTION #9)?

______ ENGLISH
______ CAMBODIAN
______ CHAMORRO
______ LAOTIAN
______ SAMOAN
______ THAI
______ TONGAN
______ VIETNAMESE
______ OTHER (SPECIFY: ___________________)
______ DON’T KNOW / NOT SURE

11. Do you have a regular medical doctor?

______ YES
______ NO → SKIP TO QUESTION #13
______ DON’T KNOW / NOT SURE → SKIP TO QUESTION #13
12. What language does your doctor speak to you?

- ENGLISH
- CAMBODIAN
- CHAMORRO
- LAOTIAN
- SAMOAN
- THAI
- TONGAN
- VIETNAMESE
- OTHER (SPECIFY: ________________________)
- DON'T KNOW / NOT SURE

13. If you had a choice, what language would you prefer to speak with your doctor or medical provider at the place you seek care?

- ENGLISH
- CAMBODIAN
- CHAMORRO
- LAOTIAN
- SAMOAN
- THAI
- TONGAN
- VIETNAMESE
- OTHER (SPECIFY: ________________________)
- DON'T KNOW / NOT SURE

14. Have you ever wanted a medical interpreter?

- YES
- NO → SKIP TO QUESTION #17

15. Have you ever asked for a medical interpreter?

- YES
- NO → SKIP TO QUESTION #17
16. Did you receive an interpreter for the visit with the medical provider?
   ______ YES
   ______ NO → SKIP TO QUESTION #17

17. Who usually interprets for you? (CHECK ALL THAT APPLY)
   ______ A CHILD (UNDER 18 YEARS) FAMILY MEMBER
   ______ AN ADULT FAMILY MEMBER
   ______ FRIEND
   ______ PROFESSIONAL MEDICAL INTERPRETER (paid for by the client)
   ______ PROFESSIONAL MEDICAL INTERPRETER (paid for by the doctor/hospital/clinic)
   ______ A STAFF MEMBER AT THE MEDICAL SITE
   ______ A BI-LINGUAL STAFF MEMBER AT THE MEDICAL SITE
   ______ TELEPHONE LANGUAGE LINE
   ______ NO ONE
   ______ OTHER (SPECIFY: ____________________________)

18. Do you feel comfortable with your doctor?
   ______ YES
   ______ NO
   ______ DON'T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW).

19. Is your doctor a man or woman?
   ______ MAN
   ______ WOMAN

20. In general, do you understand your doctor’s or healthcare provider’s explanations well enough to follow his or her recommendations?
   ______ YES
   ______ NO
   ______ DON’T KNOW / NOT SURE
21. If you do not understand what the doctor is recommending, are you able to ask questions about your condition or the doctor’s recommendations?

______ YES  
______ NO  
______ DON’T KNOW / NOT SURE

22. Do you feel that you need help with getting healthcare? For example, do you need help with making an appointment, filling out paperwork, transportation, etc.

______ YES  
______ NO → SKIP TO QUESTION #24  
______ DON’T KNOW / NOT SURE → SKIP TO QUESTION #24

23. What kind of help do you need in order to get healthcare? (CHECK ALL THAT APPLY)

______ You need to know whether or not your problem/worry is serious enough to go in to see the doctor
______ You need help making appointments for healthcare
______ You need transportation to appointments
______ You need help filling out paperwork for healthcare
______ You need help getting a referral(s) to another doctor for specialized care
______ You need help getting medicine prescriptions
______ You need help understanding prescriptions (e.g. what medicines you are taking and why you are taking them, or how you should take them-how many each day, and what side effects you may experience)
______ You need language interpretation
______ None
______ OTHER (SPECIFY: _______________________________________________)

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24. What kind of help for healthcare have you received in the past?
   (CHECK ALL THAT APPLY)
   ______ You need to know whether or not your problem/worry is serious enough to go in to see the doctor
   ______ You need help making appointments for healthcare
   ______ You need transportation to appointments
   ______ You need help filling out paperwork for healthcare
   ______ You need help getting a referral(s) to another doctor for specialized care
   ______ You need help getting medicine prescriptions
   ______ You need help understanding prescriptions (e.g. what medicines you are taking and why you are taking them, or how you should take them-how many each day, and what side effects you may experience)
   ______ You need language interpretation
   ______ None
   ______ OTHER (SPECIFY:_________________________________________________)

III. INSURANCE: “Now I would like to ask you some questions about health insurance”:
SHOW PICTURES OF DIFFERENT INSURANCE CARDS AND DESCRIBE THE DIFFERENT TYPES OF INSURANCE. DISTINGUISH BETWEEN MEDI-CAL VS. KAISER, ETC. AND THEN ASK THE FOLLOWING QUESTIONS:

25. What type of health insurance do you have? (CHECK ALL THAT APPLY)
   ______ NONE-----> SKIP TO QUESTION #28
   ______ PRIVATE (What is the name of your insurance? ___________________________)
   ______ MEDI-CARE
   ______ MEDI-CAL
   ______ MEDICARE/MEDI-CAL
   ______ MSI (Medical Service for Indigents)
   ______ OTHER (SPECIFY:_________________________________________________)
   ______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

26. Is your insurance adequate to cover your medical care?
   ______ YES -----> SKIP TO QUESTION # 28
   ______ NO
   ______ DON’T KNOW / NOT SURE -----> SKIP TO QUESTION #28.
27. What medical care services are **not** covered by your insurance?

_____________________________________________________________________________

_____________________________________________________________________________

IV. DISCRIMINATION EXPERIENCES: “The following section will ask you about personal feelings about your daily experiences. These questions are important, as our feelings may directly affect our health or influence how we respond to health issues.” (PLEASE HAND ANSWER CARDS TO THE PARTICIPANT AND HAVE THEM SHOW YOU THE ANSWER TO EACH QUESTION AS YOU READ IT TO THEM, IF APPLICABLE)

28. In your day-to-day life, have you had the following experiences? If yes, please tell me how often each of these might have occurred - almost every day, several times a week, a few times a month, a few times a year, or never? (CHECK ONE ANSWER FOR EACH QUESTION)

<table>
<thead>
<tr>
<th>Experience</th>
<th>Almost every day</th>
<th>Several times a week</th>
<th>Few times a month</th>
<th>Few times a year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. You are treated with less courtesy or respect than other people</td>
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<td>b. You are treated with less courtesy or by your husband</td>
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<tr>
<td>c. You receive poorer service than other people at restaurants or stores</td>
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<tr>
<td>d. People act as if they think you are not smart</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>e. People act as if they are afraid of you</td>
<td></td>
<td></td>
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<tr>
<td>f. People act as if they think you are dishonest</td>
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<tr>
<td>g. People act as if they’re better than you are</td>
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<tr>
<td>h. You or your family members are called names or insulted</td>
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<tr>
<td>i. You are threatened or harassed</td>
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<tr>
<td>j. People ignore you or act as if you are not there</td>
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</tbody>
</table>

**IF ONE OR MORE OF THE RESPONSES TO QUESTIONS #28 A-J IS “ALMOST EVERY DAY” OR “SEVERAL TIMES A WEEK,” PLEASE ANSWER QUESTION # 29. IF NOT, PLEASE SKIP TO QUESTION #30.**
29. What do you think is the main reason for these experiences (CHECK AND RANK THE ANSWERS THAT APPLY)

_____ Race
_____ Ethnicity
_____ Being a woman
_____ Language (Limited ability to speak English)
_____ Age
_____ Income level/ Social Class
_____ Accent
_____ Religion
_____ Physical appearance
_____ Sexual orientation
_____ OTHER (SPECIFY:________________________________________________)

30. Thinking of your experience(s) with receiving healthcare in the United States, have you ever been treated badly?

_____ YES
_____ NO
_____ HAVE NEVER RECEIVED HEALTHCARE IN THE U.S.
_____ DON’T KNOW/NOT SURE

V. “Now I would like to ask you a few questions about your household and your daily activities.”

31. Do you feel you have enough support from other people to help with your daily household work?

_____ YES
_____ NO
_____ DON’T KNOW / NOT SURE

32. Do you feel you have enough time to take care of your health needs to prevent sickness?

_____ YES
_____ NO
_____ DON’T KNOW / NOT SURE
33. Are you currently employed?
   ______ YES
   ______ NO → SKIP TO #35
   ______ DON’T KNOW / NOT SURE → SKIP TO #35

34. Do you lose income if you take time off to go see the doctor?
   ______ YES
   ______ NO
   ______ DON’T KNOW / NOT SURE

35. How hard is it for you to pay for the very basics like food, housing, medical care, electricity, and heating? Would you say it is......
   ______ Very hard
   ______ Somewhat hard
   ______ Hard
   ______ Not hard at all
   ______ DON’T KNOW / NOT SURE

36. How many people live in your household, including yourself?
   ______ (# in household)

37. How many of the people in your household contribute to your household income?
   ______ (# of relatives in household)

38. How many of the people in your household are children under 18 years of age?
   ______ (# of children in household)

VI. MAMMOGRAPHY: “Now I would like to ask you some questions about mammograms, clinical breast examinations, and breast self-examinations. These are three different health examinations. The questions that I am about to ask you sound very similar, but they ask about each of the three different examinations. Let’s begin with some questions about mammograms. A mammogram is a special x-ray taken only of the breasts by a machine. This machine presses the breast against a small table at the level of your breast for about 5 seconds while the pictures are taken.” SHOW PICTURE TO PARTICIPANT TO CLARIFY EXAMINATION TYPE.

39. Have you ever heard of a mammogram? (DO NOT READ RESPONSES)
   ______ YES
   ______ NO
   ______ DON’T KNOW / NOT SURE
40. Have you ever had a mammogram?
   ____ YES--> When was your most recent mammogram? ______________(MONTH/YEAR)
   ____ NO→ SKIP TO QUESTION #53
   ____ DON'T KNOW → SKIP TO QUESTION #53

41. How often do you get a mammogram?
   ____ Once a year
   ____ Once every two years
   ____ Less frequent than once every five years
   ____ When there is pain

42. Where did you go to get this mammogram? Please be specific and provide the name of the place.
   (ASK THE RESPONDENT TO PROVIDE SPECIFIC NAME OF THE HOSPITAL, CLINIC, DOCTOR'S OFFICE, X-RAY/RADIOLOGY LAB, ETC. IF THE RESPONDENT DOES NOT KNOW THE SPECIFIC NAME, ASK IF THEY KNOW THE CROSSTREETS OR DIRECTIONS TO THE PLACE). WRITE ANSWER IN SPACE BELOW.

43. How did you know to go to this site/provider for a mammogram? Did you learn about it from ………………….(CHECK ALL THAT APPLY)
   ____ A community organization (E.G. FIGH, SNNA, ETC.)
   ____ A mainstream newspaper (E.G. THE LOS ANGELES TIMES)
   ____ An ethnic newspaper
   ____ An ethnic radio advertisement
   ____ A friend
   ____ By word of mouth
   ____ A community leader
   ____ OTHER (SPECIFY:___________________________________________________)

44. How much of the cost of the mammogram did you have to pay with cash/from your own pocket? Did you have to pay none, part, or all of the cost of the mammogram?
   ____ NONE
   ____ PART (SPECIFY AMOUNT:____________________)
   ____ ALL (SPECIFY AMOUNT:______________________)
45. What was the ONE main reason why you had this mammogram? Did you have this mammogram...
   _____ As part of a routine physical exam
   _____ As part of a pregnancy exam
   _____ Because of a specific breast problem
   _____ As a follow-up to a previously identified breast problem
   _____ As a baseline or initial mammogram
   _____ OTHER (SPECIFY: ______________________)

46. Did you find out the results of your mammogram?
   _____ YES
   _____ NO → SKIP TO QUESTION #53
   _____ DON’T KNOW / NOT SURE → SKIP TO QUESTION #53

47. How did you find out about the results of the mammogram? Did you find out from...
   _____ Phone call from provider
   _____ Mail from provider
   _____ Follow-up visit with provider
   _____ OTHER (SPECIFY: ______________________)
   _____ DON’T KNOW / NOT SURE

48. In what language were you notified of the results of the mammogram?
   _____ ENGLISH
   _____ CAMBODIAN
   _____ CHAMORRO
   _____ LAOTIAN
   _____ SAMOAN
   _____ THAI
   _____ TONGAN
   _____ VIETNAMESE
   _____ OTHER (SPECIFY: ______________________)
49. Have you ever had a mammogram where the results were not normal?
   _____ YES
   _____ NO → SKIP TO QUESTION #53
   _____ DON’T KNOW / NOT SURE → SKIP TO QUESTION #53

50. What additional tests and/or surgery did you have because of the abnormal results?
   (CHECK ALL THAT APPLY)
   _____ None
   _____ Another mammogram
   _____ Ultrasound
   _____ Clinical breast exam
   _____ Needle biopsy
   _____ Tumor removed (lumpectomy)
   _____ Breast removed (mastectomy)
   _____ Alternate therapy
   _____ OTHER (SPECIFY:___________________)
   _____ DON’T KNOW / NOT SURE

51. What were the results of these additional tests and/or treatment?

________________________________________________________________________________
________________________________________________________________________________

52. Did you understand the reason or purpose for the additional tests and/or treatment?
   _____ YES
   _____ NO
   _____ DON’T KNOW/NOT SURE

53. At what age do you think a woman should begin getting her mammogram(s)?
   PLEASE SPECIFY AGE: ______________________________
   _____ DON’T KNOW/NOT SURE
54. How often do you think a woman your age should get a mammogram?…… (CHECK ONE)

______ Once a year.
______ Once every two years.
______ Only if she feels she has a problem.
______ Only during the years she’s having babies.
______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

55. Please choose the ONE statement which BEST reflects your intent about getting a mammogram in the future.

______ I have not even thought about getting a mammogram (PRECONTEMPLATION)
______ I have had a mammogram in the past, but am not thinking about getting another one (RELAPSE PRECONTEMPLATION)
______ I know I need to think about getting one someday, but probably not in the next one to two years (CONTEMPLATION)
______ I have not been getting regular mammograms, but I am planning to make the appointment to get one in the next one to two years (PREPARATION)
______ I plan to continue getting mammograms every one to two years. (ACTION)
______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

VII. CLINICAL BREAST EXAMS (CBEs): "Now I would like to ask you a few questions about clinical breast examinations, which is when a doctor or nurse feels your breasts when you are undressed to check for lumps, changes, or discharge problems.” SHOW PICTURE TO PARTICIPANT TO CLARIFY EXAMINATION TYPE.

56. Have you ever had a doctor or nurse examine your breasts? …… (CHECK ONE)

______ YES → When was your most recent exam? _______________ (MONTH, YEAR)
______ NO → SKIP TO QUESTION #60
______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW) → SKIP TO QUESTION #60

57. How often do you receive a clinical breast exam (CBE)?

______ Once a year
______ Once every two years
______ Less frequent than once every five years
______ When there is pain
58. Where did you go to get this clinical breast exam (CBE)? Please be specific and provide the name of the place. (ASK THE RESPONDENT TO PROVIDE SPECIFIC NAME OF THE HOSPITAL, CLINIC, DOCTOR’S OFFICE, ETC. IF THE RESPONDENT DOES NOT KNOW THE SPECIFIC NAME, ASK IF THEY KNOW THE CROSSTREETS OR DIRECTIONS TO THE PLACE). WRITE ANSWER IN SPACE BELOW.

____________________________________________________________________
____________________________________________________________________

59. How did you know to go to this site/provider for a clinical breast exam (CBE)? Did you learn about it from…………….. (CHECK ALL THAT APPLY)

____ A community organization (E.G. FIGH, SNNA, ETC.)
____ A mainstream newspaper (E.G. THE LOS ANGELES TIMES)
____ An ethnic newspaper
____ An ethnic radio advertisement
____ A friend
____ By word of mouth
____ A community leader
____ OTHER (SPECIFY: ________________________________________________)

60. At what age should a woman begin getting her clinical breast exam(s) CBE(s)?

PLEASE SPECIFY AGE: _________________________________
____ DON'T KNOW/NOT SURE

61. How often do you think a woman your age should get a clinical breast exam (CBE)?…… (CHECK ONE)

____ Once a year.
____ Once every two years.
____ Only if she feels she has a problem.
____ Only during the years she’s having babies.
____ DON'T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)
62. Please choose the ONE statement which BEST reflects your intent about getting a clinical breast exam (CBE). (Check one)

______ I have not even thought about getting a CBE. (PRECONTEMPLATION)

______ I have had a CBE in the past, but am not thinking about getting another one. (RELAPSE PRECONTEMPLATION)

______ I know I need to think about getting a CBE done someday, but probably not in the next year. (CONTEMPLATION)

______ I have not been getting regular CBE, but I am planning to make the appointment to get one in the next year. (PREPARATION)

______ I plan to continue getting a CBE once a year. (ACTION)

______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

VIII. BREAST SELF EXAM (BSE): “Next, I would like to ask you some questions about breast self-examinations.” SHOW PICTURE TO PARTICIPANT TO CLARIFY EXAMINATION TYPE.

63. Have you heard that a woman should examine her own breasts to check for changes in appearance, lumps, or other changes?

______ YES.

______ NO.

______ DON’T KNOW / NOT SURE.

64. Have you ever been taught by a doctor, nurse, or community worker how to examine your own breasts?

______ YES. (CHECK WHICH SPECIFIC ANSWER APPLIES)

______ by a doctor→ SKIP TO QUESTION #66

______ by a nurse→ SKIP TO QUESTION #66

______ by a community worker

______ NO. → SKIP TO QUESTION #67

______ DON’T KNOW / NOT SURE. → SKIP TO QUESTION #67
65. From whom/where did you learn to perform a breast self examination (BSE)?
   (CHECK ONE)
   _____ A community organization (E.G. FIGH, SNNA, ETC.)
   _____ A mainstream newspaper (E.G. THE LOS ANGELES TIMES)
   _____ An ethnic newspaper
   _____ An ethnic radio advertisement
   _____ A friend
   _____ By word of mouth
   _____ A community leader
   _____ OTHER (SPECIFY: ____________________________________________)

66. How often do you perform a breast self exam (BSE)?
   (CHECK ONE)
   _____ Once a week
   _____ Once a month
   _____ Once a year
   _____ Less frequent than every two years
   _____ When there is pain

67. At what age do you think that a woman should begin performing breast self exams (BSEs)?
   PLEASE SPECIFY AGE: ________________________________
   _____ DON’T KNOW/NOT SURE

68. How often do you think a woman your age should practice breast self examination (BSE)?
   (CHECK ONE)
   _____ Once a week.
   _____ Once a month.
   _____ Once a year.
   _____ Only during the years she’s having babies.
   _____ Only if she feels she has a problem.
   _____ DON’T KNOW / NOT SURE.
69. Please choose the ONE statement from the following, which BEST reflects your intent about breast self-exams (BSE).

_______ I have not even thought about doing BSE. (PRECONTEMPLATION)

_______ I have done BSE in the past, but am not thinking about doing BSE in the next month. (RELAPSE CONTEMPLATION)

_______ I know I need to think about doing BSE someday, but probably not in the next month. (CONTEMPLATION)

_______ I have not been doing BSEs regularly, but I am planning to do BSE in the next month. (PREPARATION)

_______ I plan to continue doing BSEs monthly. (ACTION)

_______ DON'T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

IX. BREAST CANCER: “Now I am going to ask you some questions about breast cancer.”

70. Do you agree or disagree with each of the following statements? (DO NOT READ RESPONSES - CHECK ONE ANSWER FOR EACH STATEMENT)

<table>
<thead>
<tr>
<th>Breast Cancer</th>
<th>AGREE</th>
<th>DIS-AGREE</th>
<th>DON'T KNOW / NOT SURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Most women with breast cancer can live a normal lifetime if it is discovered and treated early.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. A woman is more likely to get breast cancer if her mother or sister has had it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. A woman is more likely to get breast cancer if she eats a diet high in fat.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. A mammogram can find breast cancer in its early stages.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. People get breast cancer because they have lived a bad life.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. A mammogram is only needed if I feel I have symptoms.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. If breast cancer is found early, it can be cured.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
h. I think I would rather not know if I had breast cancer.

i. I would undergo breast cancer treatment that is unpleasant or painful if it would improve my chances of living longer.

j. I would be afraid to tell my husband or partner if I had breast cancer because it would damage our relationship.

k. Breast cancer can be cured by traditional healers.

l. I need a mammogram only when I have a breast lump.

m. There is not much that I can do to prevent breast cancer.

n. I am very likely to get breast cancer in my lifetime.

o. Trauma to the breast(s) causes cancer.

p. Breast cancer is caused by bad winds.

q. Breast cancer is caused by (bad) spirits.

71. Which of the following are possible signs or symptoms of breast cancer (CHECK ALL THAT APPLY)

____ Breast lump
____ Bloody breast discharge
____ Puckered breast skin (skin on breast in particular areas look like the texture of an orange or lemon peel)
____ Painful breasts
____ Changes in breast size from normal
72. Mammograms can find problems in the breast very early when the chance of treatment is much higher. What would make it more likely for you to get a mammogram in the future? (CHECK ALL THAT APPLY)

_____ If your doctor recommended it.
_____ If your friend or family recommended it.
_____ If transportation to the clinic was provided for you.
_____ If someone made an appointment for you to get one.
_____ If the mammogram was provided to you at low or no cost.
_____ If someone (like a friend or family member) went with you.
_____ If you had a female doctor or nurse.
_____ OTHER (PLEASE SPECIFY: _______________________________)

X. CERVICAL PAP SMEAR EXAMINATIONS: “Now I would like to ask you some questions about cervical Pap-smear examinations. A Pap smear is a routine test in which the doctor examines a woman’s womb and gently wipes the opening of the womb with a flat wooden stick and/or a clean cotton Q-tip to check the health of the surface skin of the opening of the womb.” SHOW PICTURE TO PARTICIPANT TO CLARIFY EXAMINATION TYPE.

73. Have you ever heard of a Pap smear exam or Pap test? (DO NOT READ RESPONSES)

_____ YES
_____ NO
_____ DON’T KNOW / NOT SURE

74. Have you ever had a Pap smear?

_____ YES—> When was your most recent Pap smear? ____________ (MONTH/YEAR)
_____ NO—> SKIP TO QUESTION #86
_____ DON’T KNOW / NOT SURE —> SKIP TO QUESTION #86

75. How often do you get a Pap smear?

_____ Once a year
_____ Once every two years
_____ Less frequent than once every four years
_____ When there is pain
_____ When there is smelly discharge
_____ OTHER (PLEASE SPECIFY: _____________________________________________)
76. Where did you go to get this Pap smear? Please be specific and provide the name of the place. (ASK THE RESPONDENT TO PROVIDE SPECIFIC NAME OF THE HOSPITAL, CLINIC, DOCTOR’S OFFICE, X-RAY/RADIOLOGY LAB, ETC. IF THE RESPONDENT DOES NOT KNOW THE SPECIFIC NAME, ASK IF THEY KNOW THE CROSSTREETS OR DIRECTIONS TO THE PLACE). WRITE ANSWER IN SPACE BELOW.

____________________________________________________________________

77. How did you know to go to this site/provider for a Pap smear? Did you learn about it from................. (CHECK ALL THAT APPLY)

   ___ A community organization (E.G. FIGH, SNNA, ETC.)
   ___ A mainstream newspaper (E.G. THE LOS ANGELES TIMES)
   ___ An ethnic newspaper
   ___ An ethnic radio advertisement
   ___ A friend
   ___ By word of mouth
   ___ A community leader
   ___ OTHER (SPECIFY:___________________________________________________)

78. How much of the cost of the Pap smear test did you have to pay with cash/from your own pocket? Did you have to pay none, part, or all of the cost of the Pap smear test?

   ____ NONE
   ____ PART (SPECIFY AMOUNT:_____________________
   ____ ALL (SPECIFY AMOUNT:_______________________)

79. What was the ONE main reason why you had this Pap smear test?

   ____ As part of a routine physical exam
   ____ As part of a pregnancy exam
   ____ Because of a specific gynecological problem
   ____ As a follow-up to a previously identified gynecological problem
   ____ OTHER (SPECIFY:___________________________)

80. Did you receive the results of your Pap smear test?

   ____ YES
   ____ NO→ SKIP TO QUESTION # 86
   ____ DON’T KNOW / NOT SURE→ SKIP TO QUESTION # 86
81. Have you ever had a Pap smear where the results were not normal?
   _____ YES
   _____ NO→ SKIP TO QUESTION # 86
   _____ DON'T KNOW/NOT SURE→ SKIP TO QUESTION # 86

82. In what language were you notified of the results of the Pap smear?
   _____ ENGLISH
   _____ CAMBODIAN
   _____ CHAMORRO
   _____ LAOTIAN
   _____ SAMOAN
   _____ THAI
   _____ TONGAN
   _____ VIETNAMESE
   _____ OTHER (SPECIFY: ________________________)

83. Because of these results, did you have additional tests and/or treatment? (CHECK ALL THAT APPLY)
   _____ None
   _____ Another Pap Smear
   _____ A Colposcopy
   _____ A Loop Electrosurgical Excision Procedure (LEEP)
   _____ A cervical biopsy
   _____ Alternate Therapy
   _____ OTHER (SPECIFY: ____________________________)
   _____ DON'T KNOW / NOT SURE

84. Did you understand the reason or purpose for the follow up procedure?
   _____ YES
   _____ NO
   _____ DON'T KNOW/NOT SURE
85. What were the results of these additional tests and/or treatment?

86. Do you agree or disagree with each of the following statements?
   (DO NOT READ RESPONSES - CHECK ONE ANSWER FOR EACH STATEMENT)

<table>
<thead>
<tr>
<th>Cervical Cancer</th>
<th>AGREE</th>
<th>DIS-AGREE</th>
<th>DON'T KNOW/NOT SURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. If cancer of the cervix is found early, it can be cured.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I have family or friends who encourage me to get Pap smears.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. A woman is more likely to get cancer of the cervix if she began having sex at an early age.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. A woman is more likely to get cancer of the cervix if she has had many sexual partners.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. A woman is more likely to get cancer of the cervix if her husband has had many sexual partners.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. A woman is more likely to get cancer of the cervix if she is exposed to cigarette smoke.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. A woman is more likely to get cancer of the cervix if she has poor personal hygiene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. A woman is more likely to get cancer of the cervix if she uses an intrauterine device (IUD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. A woman is more likely to get cancer of the cervix if she uses birth control pills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. A woman does not need to get Pap smears after she reaches menopause (i.e. stops having her periods)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>k. A woman does not need to get Pap smears after she stops having children.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l. Only women who are sexually active should get Pap smears.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m. I'm too busy to get Pap smears.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
87. At what age do you think that a woman should begin getting a Pap smear?

PLEASE SPECIFY AGE: ____________________________________________

____ DON'T KNOW/NOT SURE

88. How often do you think a woman your age should get a Pap smear…………………..(CHECK ONE)

____ Once a year.

____ Once every two years.

____ Only during the years she’s having babies.

____ Only if she feels she has a problem.

____ DON'T KNOW / NOT SURE. (DO NOT READ)

89. Please choose the ONE statement that BEST reflects your intent about getting a Pap smear

____ I have not even thought about getting a Pap smear. (PRECONTEMPLATION)

____ I have had a Pap smear in the past, but am not thinking about getting another one. (RELAPSE CONTEMPLATION)

____ I know I need to think about getting a Pap smear someday, but probably not in the next year. (CONTEMPLATION)

____ I have never had a Pap smear, but I am planning to make the appointment to get a Pap smear in the next year. (PREPARATION)

____ I have had a Pap smear before though not in the past year; but I am planning to make the appointment to get one in the next year. (PREPARATION)

____ I plan to continue getting Pap smears yearly. (ACTION)

____ DON'T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

90. What would make it more likely for you to get a Pap smear in the future? (CHECK ALL THAT APPLY)

____ If your doctor recommended it.

____ If your friend or family recommended it.

____ If transportation to the clinic was provided for you.

____ If someone made an appointment for you to get one.

____ If the pap smear was provided to you at low or no cost.

____ If someone (like a friend or family member) went with you.

____ If you had a female doctor or nurse.
XI. CANCER INFORMATION: “Next, I would like to ask you some general questions about cancer.”

91. Do you agree or disagree with each of the following statements? (DO NOT READ RESPONSES - CHECK ONE ANSWER FOR EACH STATEMENT)

<table>
<thead>
<tr>
<th>Statement</th>
<th>AGREE</th>
<th>DIS-AGREE</th>
<th>DON'T KNOW/NOT SURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. If I were to need cancer tests or treatment, there are people I could talk to about my feelings and concerns.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Cancer treatment that is unpleasant or painful is worth getting if it would help me to live longer.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. If cancer is found early, it can be cured.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. If I had cancer, I would want to know that I have it.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. If I had cancer, I would want my family to know I have it.</td>
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</tbody>
</table>

XII. EDUCATIONAL RESOURCES: “Next, I would like to get your opinion on health education resources for your community.”

92. In the past two years, what sources of information for breast and cervical cancer have you been exposed to? (CHECK ALL THAT APPLY)

- Educational Brochures/Pamphlets (SPECIFY NAME(S):____________________)
- Newspapers (SPECIFY NAME(S):___________________________)
- Radio (SPECIFY NAME(S):_______________________________)
- T.V. (SPECIFY NAME(S):_____________________________)
- Health providers (SPECIFY NAME(S):_________________________)
- Health Educators
- Community outreach workers
- Friends
- Family
93. Have you taken a similar survey like this before?

_____ YES → When was it done? _______ (MONTH, YEAR)

_____ NO

_____ DON'T KNOW / NOT SURE

“I am finished asking the interview questions. Is there anything you would like to add? Is there anything else you want to say?”

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

“Thank you very much for taking the time to answer these questions. Your answers will help us to provide more health information and services to Asian and Pacific Islander women in the community. This will help keep women healthy for themselves and for their families.”
APPENDIX B: PATH for Women Follow-Up Survey
BREAST AND CERVICAL CANCER SCREENING KNOWLEDGE AND PRACTICE QUESTIONNAIRE

Instructions to the interviewer: Please mark a check on the line or box next to the person’s response. Except where indicated, please check off only one answer for each question. Except where indicated (special instructions for questions are in CAPITAL letters), read the question and the responses to the respondent. Please read words in lower case letters. Do not read words in CAPITAL letters.

If the respondent refuses to answer a question, please mark an (R)* on the left side of the question. If the respondent appears uncomfortable with the question, please mark a (U)* on the left side of the question. If the respondent seems to misunderstand or misinterpret the question, please mark an (M)* on the left side of the question.

Please spell out all words and acronyms and provide as much detail as possible for open-ended questions, i.e. Name of Hospital—also provide the city and streets, if possible.

PLEASE FILL IN THE FOLLOWING INFORMATION FOR ALL INTERVIEWS:

LOCATION OF INTERVIEW: ___________________________________________________
(FOR EXAMPLE CROSS STREETS, ADDRESS)

CITY AND ZIP CODE OF INTERVIEW: ___________________________________________

SITE OF INTERVIEW: ___ HOME ___ CHURCH ___ WORK
___ TEMPLE ___ MARKET ___ HOSPITAL
___ OTHER: (Please list: ______________________________)

INTERVIEWER: ________________________________

DATE: _____/_____/04
(MONTH/ DAY/YEAR)

TIME BEGIN: ___________ AM / PM TIME END: ________ AM / PM

# MINUTES TO COMPLETE INTERVIEW: ________

INTRODUCTION – PLEASE READ TO RESPONDENT:

“Thank you for participating in this survey. Your answers will be kept strictly confidential and anonymous. No one will know who you are from your responses to this questionnaire.

Your answers are very important. Please answer each question on this survey.

We are sorry if some questions may be embarrassing, but all of these are important questions and we would greatly appreciate your honest opinions, feelings, and experiences. Many (ETHNIC GROUP) women are not obtaining healthcare from a physician on a regular basis for female health issues. Therefore, we are seeking your thoughts and ideas about breast cancer and cervical cancer so we can gain a sense of how we can best meet the needs for health information and services for (ETHNIC GROUP) women. As well, some of the questions may sound familiar, please
be patient with us as we proceed through the set of questions. Thank you for agreeing to participate with us.

1. MEDICAL CARE: “I would like to ask you some questions about your medical care.” (THESE QUESTIONS PERTAIN TO WESTERN MEDICAL PROVIDERS.)

1. Where do you go for your medical care? (PLEASE CHECK ALL THAT APPLY)
   ______ A hospital
   ______ A community clinic
   ______ A private physician’s office
   ______ The emergency room
   ______ OTHER (PLEASE SPECIFY: ____________________)
   ______ NONE

2. Please provide the address/cross streets of the place you go to for your medical care: (PLEASE PROBE FOR AS MUCH DETAIL AS POSSIBLE. PLEASE NOTE IF IN ANOTHER COUNTRY)

________________________________________________________________________
________________________________________________________________________

3. In order to understand how far you have to travel to go for medical care, I would like to find out approximately where you live.

What city: ________________________________________________________________

What are the closest major cross streets: ________________________________

4. Where is your preferred site for healthcare? (PLEASE CHECK ONE)
   ______ Close to Home
   ______ Close to Work
   ______ Close to Family
   ______ OTHER (PLEASE STATE: ________________________________)

5. Has your medical provider changed?
   ______ YES
   ______ NO
   ______ DON’T KNOW/NOT SURE

192
6. In what language are medical services usually provided to you? (PLEASE CHECK ALL THAT APPLY)?
   _____ ENGLISH
   _____ CAMBODIAN
   _____ CHAMORRO
   _____ LAOTIAN
   _____ SAMOAN
   _____ THAI
   _____ TONGAN
   _____ VIETNAMESE
   _____ OTHER (SPECIFY:_____________________)  
   _____ DON'T KNOW / NOT SURE

7. Do you have a regular medical doctor? (CHECK ONE)
   _____ YES
   _____ NO ➔ SKIP TO QUESTION # 9
   _____ DON'T KNOW / NOT SURE ➔ SKIP TO QUESTION # 9

8. What language does your doctor speak to you? (CHECK ALL THAT APPLY)
   _____ ENGLISH
   _____ CAMBODIAN
   _____ CHAMORRO
   _____ LAOTIAN
   _____ SAMOAN
   _____ THAI
   _____ TONGAN
   _____ VIETNAMESE
   _____ OTHER (SPECIFY:_____________________)  
   _____ DON'T KNOW / NOT SURE
9. If you had a choice, what language(s) would you feel most comfortable speaking when you visit your doctor? (CHECK ALL THAT APPLY)

- ENGLISH
- CAMBODIAN
- CHAMORRO
- LAOTIAN
- SAMOAN
- THAI
- TONGAN
- VIETNAMESE
- OTHER (SPECIFY______________________)
- DON'T KNOW / NOT SURE

10. During your last medical visit, did you have questions that you would have liked to ask?

- YES \( \rightarrow \) IF YES, PLEASE ANSWER A

\[ A. \quad \text{Did you ask those questions?} \quad \]

- YES \( \rightarrow \) SKIP TO QUESTION # 12
- NO \( \rightarrow \) SKIP TO QUESTION # 12
- DON'T KNOW/NOT SURE \( \rightarrow \) SKIP TO QUESTION # 12

11. Why did you not ask? (CHECK ALL THAT APPLY)

- It is not culturally appropriate to question the doctor
- I did not understand the doctor
- There was no time
- I did not feel comfortable
- The doctor did not ask you if you had questions
- OTHER (PLEASE SPECIFY:______________________________)
12. In the last year, have you asked for a medical interpreter? (CHECK ONE)

______ YES

______ NO → SKIP TO QUESTION # 16

______ OTHER (PLEASE SPECIFY: ____________________________)

13. In the last year, did you receive an interpreter for your visit with the medical provider? (CHECK ONE)

______ YES

______ NO → SKIP TO QUESTION # 16

______ DON'T KNOW/NOT SURE → SKIP TO QUESTION # 16

14. Who interpreted for you in this visit? (CHECK ALL THAT APPLY)

______ A CHILD (UNDER 18 YEARS) FAMILY MEMBER

______ AN ADULT FAMILY MEMBER

______ FRIEND

______ PROFESSIONAL MEDICAL INTERPRETER (paid for by the client)

______ PROFESSIONAL MEDICAL INTERPRETER (paid for by the doctor/hospital/clinic)

______ A STAFF MEMBER AT THE MEDICAL SITE

______ TELEPHONE LANGUAGE LINE

______ OTHER (SPECIFY: ____________________________)

______ DON'T KNOW/NOT SURE

15. How did you know you could ask for an interpreter?

______ A Community Health Worker

______ A Community Based Organization (i.e. FIGH, GCN, SNNA, TCSC, RTSF, LFCD, NAAPI, etc.)

______ An Advertisement

______ A brochure

______ A poster

______ OTHER (PLEASE SPECIFY): ____________________________
16. During your medical visit, did you understand your doctor’s or healthcare provider’s explanations well enough to follow his or her recommendations? (PLEASE CHECK ONE)

- YES  →  SKIP TO QUESTION # 19
- NO
- DON’T KNOW / NOT SURE  →  SKIP TO QUESTION #19

17. Is there someone there to help you better understand the doctor or healthcare provider?

- YES
- NO
- DON’T KNOW / NOT SURE

18. If you are not sure or do not understand what the doctor is recommending, are you able to ask questions about your condition or the doctor’s recommendations? (CHECK ONE)

- YES
- NO
- DON’T KNOW / NOT SURE

19. Are you familiar with any state or federal laws that require your doctor or healthcare provider to offer you an interpreter?

- YES
- NO
- DON’T KNOW / NOT SURE
20. What kind of help have you received in the past for your healthcare? (CHECK ALL THAT APPLY)

_______ Assistance on whether or not your problem/worry is serious enough to go in to see the doctor

_______ Help making appointments for healthcare

_______ Assistance with transportation to appointments

_______ Help filling out paperwork for healthcare

_______ Help getting a referral(s) to another doctor for specialized care

_______ Help getting medicine prescriptions

_______ Help understanding prescriptions

_______ what medicines you are taking

_______ why you are taking them

_______ how you should take them (i.e. orally, before breakfast, with food, etc.)

_______ how many each day (i.e. tablets or spoonfuls)

_______ what side effects you may experience

_______ how many each time

_______ how many times a day

_______ Language interpretation

_______ None

_______ OTHER (SPECIFY:__________________________________________)

21. Do you still need help with any of the above?

_______ YES

_______ NO

_______ DON'T KNOW/NOT SURE
22. Who helped you with the healthcare? (CHECK ALL THAT APPLY)

- A CHILD (UNDER 18 YEARS) FAMILY MEMBER
- AN ADULT FAMILY MEMBER
- FRIEND
- PROFESSIONAL MEDICAL INTERPRETER (paid for by the client)
- PROFESSIONAL MEDICAL INTERPRETER (paid for by the doctor/hospital/clinic)
- A STAFF MEMBER AT THE MEDICAL SITE
- TELEPHONE LANGUAGE LINE
- OTHER (SPECIFY: ____________________________)
- DON'T KNOW/NOT SURE

II. INSURANCE: “Now I would like to ask you some questions about health insurance.”
PLEASE USE SIGNS TO HELP PARTICIPANTS DISTINGUISH INSURANCE TYPES

23. Has your health insurance status changed in the last year? (PLEASE CHECK ONE)

- YES
- NO → SKIP TO QUESTION # 25
- DON'T KNOW/NOT SURE → SKIP TO QUESTION # 25

24. What type of health insurance do you have now? (CHECK ALL THAT APPLY)

- NONE
- PRIVATE (What is the name of your insurance? ________________)
- MEDI-CARE
- MEDI-CAL
- MSI (MEDICAL SERVICES FOR THE INDIGENT)
- OTHER (SPECIFY: ________________________________________)
- DON'T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)
III. WORK AND HOME: “Now I would like to ask you some questions about your work and home.”

25. Which of the following were you doing last week? (PLEASE CHECK ALL THAT APPLY)
   
   ______ Working at a job/business → SKIP TO QUESTION # 27
   
   ______ Working at home for pay (i.e. garment work, childcare, housekeeping, etc.)
   → SKIP TO QUESTION # 27
   
   ______ Looking for work
   
   ______ Not working at a job/business
   
   ______ OTHER (PLEASE SPECIFY: ________________________________)

26. What is the main reason you did not work last week? (CHECK ALL THAT APPLY)
   
   ______ KEEPING HOUSE
   
   ______ CARING FOR CHILDREN
   
   ______ COULDN'T FIND A JOB
   
   ______ GOING TO SCHOOL/STUDENT
   
   ______ RETIRED
   
   ______ PHYSICAL DISABILITY
   
   ______ UNABLE TO WORK
   
   ______ LAID OFF OR ON STRIKE
   
   ______ UNAUTHORIZED TO WORK
   
   ______ VACATION
   
   ______ OTHER (Please specify: _________________________________)

27. How many hours per week do you usually work at all jobs or businesses?
   
   (PLEASE LIST JOB AND NUMBER OF HOURS):
   
   _____________________________________________________________
   
   _____________________________________________________________
   
   _____________________________________________________________

28. Do you lose income if you take time off to go see the doctor? (CHECK ONE)
   
   ______ YES
   
   ______ NO
   
   ______ DON'T KNOW / NOT SURE
29. How hard is it for you to pay for the very basics like food, housing, medical care, electricity, and heating? Would you say it is…… (PLEASE CHECK ONE)

______ Not hard at all
______ Somewhat hard
______ Hard
______ Very Hard
______ DON'T KNOW/NOT SURE

30. Thinking of your experiences receiving healthcare in the United States, in the past 12 months, have you been treated badly?

______ YES
______ NO → SKIP TO QUESTION # 32
______ DON'T KNOW/NOT SURE → SKIP TO QUESTION # 32

31. What do you think was the reason that you were treated badly? (CHECK ALL THAT APPLY)

______ AGE
______ RACE
______ ETHNICITY
______ LANGUAGE
______ ACCENT
______ HEALTH STATUS
______ DISABILITY
______ BODY WEIGHT
______ PHYSICAL APPEARANCE
______ INSURANCE TYPE
______ INCOME LEVEL/SOCIAL CLASS
______ RELIGION
______ SEXUAL ORIENTATION
______ GENDER/SEX
IV. MAMMOGRAPHY: “Now I would like to ask you some questions about mammograms, clinical breast examinations, and breast self-examinations. These are three different health examinations. The questions that I am about to ask you sound very similar, but they ask about each of the three different examinations. Let’s begin with some questions about mammograms. A mammogram is a special x-ray taken only of the breasts by a machine. This machine presses the breast against a small table at the level of your breast for about 5 seconds while the pictures are taken.” PLEASE SHOW PICTURES

32. Have you ever heard of a mammogram? (CHECK ONE)
   ______ YES
   ______ NO
   ______ DON'T KNOW / NOT SURE

33. Have you ever had a mammogram? (PLEASE CHECK ONE)
   ______ YES--> When was your most recent mammogram? ________________ (MONTH/YEAR)
   ______ NO→ SKIP TO QUESTION # 46
   ______ DON'T KNOW → SKIP TO QUESTION # 47

34. How often do you get a mammogram?
   ______ Once or more a year
   ______ Once every two years
   ______ Less frequent than once every five years
   ______ When there is pain

35. Where did you go to get this mammogram? Please be specific and provide the name of the place.
   (ASK THE RESPONDENT TO PROVIDE SPECIFIC NAME OF THE HOSPITAL, CLINIC, DOCTOR'S OFFICE, X-RAY/RADIOLOGY LAB, ETC. IF THE RESPONDENT DOES NOT KNOW THE SPECIFIC NAME, ASK IF THEY KNOW THE CROSSTREETS OR DIRECTIONS TO THE PLACE). WRITE ANSWER IN SPACE BELOW.

__________________________________________________________________________________
36. How did you know to go to this site/provider for a mammogram?
(Please check all that apply)

___ A COMMUNITY ORGANIZATION (e.g. FIGH, SNNA, GCN, TCSC, RTSF, NAAPI, LFCD, etc.)

Please list which one: __________________________________________________________

___ A MAINSTREAM NEWSPAPER (e.g. THE LOS ANGELES TIMES)

Please list which one: __________________________________________________________

___ AN ETHNIC NEWSPAPER

Please list which one: __________________________________________________________

___ AN ETHNIC RADIO ADVERTISMENT

___ A DOCTOR

___ A FRIEND

___ BY WORD OF MOUTH

___ A COMMUNITY LEADER

___ A SPIRITUAL LEADER

___ CHURCH OR TEMPLE

___ OTHER (Specify: __________________________________________________________)

37. How much of the cost of the mammogram did you have to pay with cash/from your own pocket? Did you have to pay none, part, or all of the cost of the mammogram?
(Check one)

___ NONE

___ PART (Specify amount: ____________________________)

___ ALL (Specify amount: ____________________________)
38. What was the one main reason why you had this mammogram? Did you have this mammogram... (PLEASE CHECK ONE)

— As part of a routine physical exam
— As part of a pregnancy exam
— Because of a specific breast problem
— As a follow-up to a previously identified breast problem
— As a baseline or initial mammogram
— OTHER (SPECIFY:____________________)

39. Did you find out the results of your mammogram? (CHECK ONE)

— YES
— NO → SKIP TO QUESTION # 47
— DON'T KNOW/NOT SURE → SKIP TO QUESTION # 47

40. How did you find out about the results of the mammogram? Did you find out from... (PLEASE CHECK ALL THAT APPLY)

— Phone call from provider
— Mail from provider
— Follow-up visit with provider
— OTHER (SPECIFY:________________________)
— DON'T KNOW / NOT SURE
41. In what language were you notified of the results of the mammogram? (CHECK ALL THAT APPLY)

_____ ENGLISH
_____ CAMBODIAN
_____ CHAMORRO
_____ LAOTIAN
_____ SAMOAN
_____ THAI
_____ TONGAN
_____ VIETNAMESE
_____ OTHER (SPECIFY: _______________________

42. Have you ever had a mammogram where the results were not normal? (CHECK ONE)

_____ YES
_____ NO → SKIP TO QUESTION # 47
_____ DON'T KNOW / NOT SURE → SKIP TO QUESTION # 47

43. Did you understand your results?

_____ YES
_____ NO → SKIP TO # 47
_____ DON'T KNOW NOT SURE → SKIP TO # 47
44. Because of these results, did you have additional tests and/or treatment? (CHECK ALL THAT APPLY)

_____ None
_____ Another mammogram (Diagnostic versus Screening)
_____ An Ultrasound
_____ A Fine Needle Aspiration (FNA)
_____ A biopsy
_____ Alternate Therapy
_____ OTHER (SPECIFY: ________________________________)
_____ DON'T KNOW / NOT SURE

45. What were the results of these additional tests and/or treatment? → SKIP TO # 47

46. Why did you not receive a mammogram? (CHECK ALL THAT APPLY)

_____ COST
_____ NOT COVERED BY INSURANCE
_____ TOO FAR
_____ DON'T NEED IT
_____ SCARED
_____ OTHER (Please specify: _________________________________)

47. At what age do you think a woman should begin getting her mammogram(s)?

PLEASE SPECIFY AGE: ______________________________

_____ DON'T KNOW/NOT SURE
48. How often do you think a woman your age should get a mammogram? (CHECK ONE)
   ______ Once or more a year.
   ______ Once every two years.
   ______ Only if she feels she has a problem.
   ______ Only during the child bearing years.
   ______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

49. Please choose the one statement which best reflects your intent about getting a mammogram in the future. (CHECK ONE)
   ______ I have not even thought about getting a mammogram (PRECONTEMPLATION)
   ______ I have had a mammogram in the past, but am not thinking about getting another one (RELAPSE PRECONTEMPLATION)
       ______ Why? ____________________________________________________________
   ______ I know I need to think about getting one someday, but probably not in the next one to two years (CONTEMPLATION)
       ______ Why? ____________________________________________________________
   ______ I have not been getting regular mammograms, but I am planning to make the appointment to get one in the next one to two years (PREPARATION)
   ______ I will make an appointment for a mammogram within the next three months (ACTION)
   ______ I plan to continue getting mammograms every one to two years. (MAINTENANCE)
   ______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

V. CLINICAL BREAST EXAMS (CBEs): “Now I would like to ask you a few questions about clinical breast examinations, which is when a doctor or nurse feels your breasts when you are undressed to check for lumps, changes, or discharge problems.” SHOW PICTURE TO PARTICIPANT TO CLARIFY EXAMINATION TYPE.

50. Have you ever had a doctor or nurse examine your breasts? ...........
   (CHECK ONE)
   ______ YES ➔ When was your most recent exam? ____________________ (MONTH, YEAR)
   ______ NO ➔ SKIP TO QUESTION # 54
   ______ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW) ➔ SKIP TO QUESTION # 54
51. How often do you get a clinical breast exam? (PLEASE CHECK ONE)
   ____ Once or more a year
   ____ Once every two years
   ____ Less frequent than once every five years
   ____ When there is pain

52. Where did you go to get this clinical breast exam (CBE)? Please be specific and provide the name of the place. (ASK THE RESPONDENT TO PROVIDE SPECIFIC NAME OF THE HOSPITAL, CLINIC, DOCTOR'S OFFICE, ETC. IF THE RESPONDENT DOES NOT KNOW THE SPECIFIC NAME, ASK IF THEY KNOW THE CROSSTREETS OR DIRECTIONS TO THE PLACE). WRITE ANSWER IN SPACE BELOW.

____________________________________________________________________
____________________________________________________________________

53. How did you know to go to this site/provider for a clinical breast exam (CBE)? (PLEASE CHECK ALL THAT APPLY)
   ____ A COMMUNITY ORGANIZATION (E.G. FIGH, SNNA, GCN, TCSC, RTSF, NAAPI, LFCD, ETC.)
      PLEASE LIST WHICH ONE: __________________________________________

   ____ A MAINSTREAM NEWSPAPER (E.G. THE LOS ANGELES TIMES)
      PLEASE LIST WHICH ONE: __________________________________________

   ____ AN ETHNIC NEWSPAPER
      PLEASE LIST WHICH ONE: __________________________________________

   ____ AN ETHNIC RADIO ADVERTISEMENT

   ____ A DOCTOR

   ____ A FRIEND

   ____ BY WORD OF MOUTH

   ____ A COMMUNITY LEADER

   ____ A SPIRITUAL LEADER

   ____ CHURCH OR TEMPLE

   ____ OTHER (SPECIFY: ____________________________________________ )
54. At what age should a woman begin getting her clinical breast exam (CBE)?

PLEASE SPECIFY AGE: _____________________________

____ DON’T KNOW/NOT SURE

55. How often do you think a woman your age should get a clinical breast exam (CBE)?

(CHECK ONE)

_____ Once or more a year.

_____ Once every two years.

_____ Only if she feels she has a problem.

_____ Only during the child bearing years.

_____ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT
DOES NOT KNOW)

56. Please choose the one statement which best reflects your intent about getting a clinical breast exam (CBE). (CHECK ONE)

_____ I have not even thought about getting a CBE. (PRECONTEMPLATION)

_____ I have had a CBE in the past, but I am not thinking about getting another one.
(RELAPSE PRECONTEMPLATION)

_____ Why? __________________________________________

_____ I know I need to think about getting a CBE done someday, but probably not in the next year. (CONTemplATION)

_____ Why? __________________________________________

_____ I have not been getting regular CBE, but I am planning to make the appointment to get one in the next year. (PREPARATION)

_____ I will make an appointment to get a CBE within the next three months. (ACTION)

_____ I plan to continue getting CBEs every one to three years. (MAINTENANCE)

_____ DON’T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT
DOES NOT KNOW)
VI. BREAST SELF EXAM (BSE): “Next, I would like to ask you some questions about breast self-examinations.” SHOW PICTURE TO PARTICIPANT TO CLARIFY EXAMINATION TYPE.

57. Have you heard that a woman should examine her own breasts to check for changes in appearance, lumps, or other changes? (CHECK ONE)
   ______ YES
   ______ NO
   ______ DON'T KNOW / NOT SURE

58. Have you ever been taught to examine your own breasts?
   ______ YES
   ______ NO → NO SKIP TO QUESTION # 61
   ______ DON'T KNOW/NOT SURE → NO SKIP TO QUESTION # 61

59. Who taught you to examine your breast? (CHECK ALL THAT APPLY)
   ______ A doctor
   ______ A nurse
   ______ A community worker
   ______ OTHER (PLEASE SPECIFY: ________________________)
   ______ DON'T KNOW / NOT SURE

60. How often do you perform a breast self exam (BSE)? (PLEASE CHECK ONE)
   ___ Once a week
   ___ Once a month
   ___ Once a year
   ___ Less frequent than every two years
   ___ When there is pain

61. At what age do you think that a woman should begin performing breast self exams (BSEs)?
   PLEASE SPECIFY AGE: ________________________________
   ___ DON'T KNOW/NOT SURE
62. How often do you think a woman your age should practice breast self examination (BSE)?
(CHECK ONE)

______ Once a week
______ Once a month
______ Once a year
______ Only during the child bearing years
______ Only if she feels she has a problem
______ DON'T KNOW / NOT SURE (PLEASE DO NOT READ)

63. Please choose the one statement from the following, which best reflects your intent about breast self-exams (BSE). (CHECK ONE)

______ I have not even thought about doing BSE. (PRECONTEMPLATION)

______ I have done BSE in the past, but am not thinking about doing BSE in the next month. (RELAPSE CONTEMPLATION)

______ Why? ________________________________

______ I know I need to think about doing BSE someday, but probably not in the next month. (CONTEMPLATION)

______ Why? ________________________________

______ I have not been doing BSEs regularly, but I am planning to do a BSE in the next month. (PREPARATION)

______ I do BSEs monthly (ACTION)

______ I plan to continue doing BSEs monthly. (MAINTENANCE)

______ DON'T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)
64. Do you agree or disagree with each of the following statements?  
(Do not read responses - check one answer for each statement. Please note to the participant that these answer options will be read as if you are the participant speaking)

<table>
<thead>
<tr>
<th>Breast Cancer</th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>DON'T KNOW/NOT SURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Most women with breast cancer can live a normal lifetime if it is discovered and treated early.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. A woman is more likely to get breast cancer if her mother or sister has had it.</td>
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<td></td>
<td></td>
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<tr>
<td>c. A woman is more likely to get breast cancer if she eats a diet high in fat.</td>
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<td></td>
<td></td>
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<tr>
<td>d. A mammogram can find breast cancer in its early stages.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. A mammogram is only needed if I feel I have symptoms.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. If breast cancer is found early, it can be cured.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. I think I would rather not know if I had breast cancer.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>h. I would undergo breast cancer treatment that is unpleasant or painful if it would improve my chances of living longer.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>i. I would be afraid to tell my husband or partner if I had breast cancer because it would damage our relationship.</td>
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<tr>
<td>j. Breast cancer can be cured by traditional healers.</td>
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<tr>
<td>k.</td>
<td>I need a mammogram only when I have a breast lump.</td>
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<td></td>
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<tr>
<td>l.</td>
<td>There is not much that I can do to prevent breast cancer.</td>
<td></td>
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<tr>
<td>m.</td>
<td>(ETHNIC) women can get breast cancer in their lifetime.</td>
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<td></td>
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<tr>
<td>n.</td>
<td>Trauma to the breast(s) causes cancer.</td>
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<tr>
<td>o.</td>
<td>Breast cancer is caused by a curse.</td>
<td></td>
<td></td>
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<tr>
<td>p.</td>
<td>Breast cancer is caused by the will of God.</td>
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<tr>
<td>q.</td>
<td>Breast cancer is caused by nature.</td>
<td></td>
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<tr>
<td>r.</td>
<td>Breast cancer is caused by what you eat (i.e. bad foods, processed foods, balance of hot and cold).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>s.</td>
<td>Breast cancer is caused by the environment (i.e. pollution, chemicals, modern technology, radiation, etc.).</td>
<td></td>
<td></td>
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<tr>
<td>t.</td>
<td>Breast cancer is caused by bad luck.</td>
<td></td>
<td></td>
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<tr>
<td>u.</td>
<td>Breast cancer is caused by bad luck in the family.</td>
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<tr>
<td>v.</td>
<td>Breast cancer is caused by spirits.</td>
<td></td>
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<tr>
<td>w.</td>
<td>Breast cancer is caused by fate.</td>
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<td></td>
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<tr>
<td>x.</td>
<td>Breast cancer is caused by ancestors.</td>
<td></td>
<td></td>
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<tr>
<td>y.</td>
<td>Breast cancer is caused by sins from present life.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>z.</td>
<td>Breast cancer is caused by sins from past life.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aa.</td>
<td>Breast cancer is caused by something in the air.</td>
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<td></td>
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</tbody>
</table>
65. Which of the following are possible signs or symptoms of breast cancer? (CHECK ALL THAT APPLY)

- Breast lump
- Bloody breast discharge
- Puckered breast skin (skin on breast in particular areas look like the texture of an orange or lemon peel)
- Painful breasts
- Changes in breast size from normal

66. Have you ever heard of a Pap smear exam or Pap test? (CHECK ONE)

- YES
- NO
- DON'T KNOW / NOT SURE

67. Have you ever had a Pap smear? (CHECK ONE)

- YES → When was your most recent Pap smear? [MONTH/YEAR]
- NO → SKIP TO QUESTION # 78
- DON'T KNOW / NOT SURE → SKIP TO QUESTION # 78

68. How often do you get a Pap smear? (CHECK ONE)

- Once or more a year
- Once every two years
- Less frequent than once every four years
- When there is pain
- When there is smelly discharge
- OTHER (PLEASE SPECIFY: ____________________________ )
69. Where did you go to get this Pap smear? Please be specific and provide the name of the place. (ASK THE RESPONDENT TO PROVIDE SPECIFIC NAME OF THE HOSPITAL, CLINIC, DOCTOR’S OFFICE, X-RAY/RADIOLOGY LAB, ETC. IF THE RESPONDENT DOES NOT KNOW THE SPECIFIC NAME, ASK IF THEY KNOW THE CROSSTREETS OR DIRECTIONS TO THE PLACE). WRITE ANSWER IN SPACE BELOW.

____________________________________________________________________

70. How did you know to go to this site/provider for a Pap smear? (PLEASE CHECK ALL THAT APPLY)

___ A COMMUNITY ORGANIZATION (E.G. FIGH, SNNA, GCN, TCSC, RTSF, LFCD, NAAPI, ETC.)

PLEASE LIST WHICH ONE:__________________________________________________

___ A MAINSTREAM NEWSPAPER (E.G. THE LOS ANGELES TIMES)

PLEASE LIST WHICH ONE:__________________________________________________

___ AN ETHNIC NEWSPAPER

PLEASE LIST WHICH ONE:__________________________________________________

___ AN ETHNIC RADIO ADVERTISEMENT

___ A DOCTOR

___ A FRIEND

___ BY WORD OF MOUTH

___ A COMMUNITY LEADER

___ A SPIRITUAL LEADER

___ CHURCH OR TEMPLE

___ OTHER (SPECIFY:______________________________________________________)

71. How much of the cost of the Pap smear test did you have to pay with cash/from your own pocket? Did you have to pay none, part, or all of the cost of the Pap smear test? (CHECK ONE)

_____ NONE

_____ PART (SPECIFY AMOUNT:_______________________)

_____ ALL (SPECIFY AMOUNT:_______________________)
72. What was the one main reason why you had this Pap smear test? (CHECK ONE)
   ______ As part of a routine physical exam
   ______ As part of a pregnancy exam
   ______ Because of a specific gynecological problem
   ______ As a follow-up to a previously identified gynecological problem
   ______ OTHER (SPECIFY:_____________________)  

73. Did you receive the results of your Pap smear test? (CHECK ONE)
   ______ YES
   ______ NO→ SKIP TO QUESTION # 78
   ______ DON'T KNOW / NOT SURE→ SKIP TO QUESTION # 78

74. How did you find out about the results of the Pap smear? Did you find out from... (PLEASE CHECK ALL THAT APPLY)
   ______ Phone call from provider
   ______ Mail from provider
   ______ Follow-up visit with provider
   ______ OTHER (SPECIFY:_________________________)
   ______ DON'T KNOW / NOT SURE

75. In what language were you notified of the results of the Pap smear? (PLEASE CHECK ALL THAT APPLY)
   ______ ENGLISH
   ______ CAMBODIAN
   ______ CHAMORRO
   ______ LAOTIAN
   ______ SAMOAN
   ______ THAI
   ______ TONGAN
   ______ VIETNAMESE
   ______ OTHER (SPECIFY:_____________________)

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76. Have you ever had a Pap smear where the results were not normal? (CHECK ONE)

______ YES
______ NO → SKIP TO QUESTION # 78
______ DON'T KNOW/NOT SURE → SKIP TO QUESTION # 78

77. Because of these results, did you have additional tests and/or treatment? (CHECK ALL THAT APPLY)

______ None
______ Another Pap Smear
______ A Colposcopy
______ A Loop Electrosurgical Excision Procedure (LEEP)
______ A cervical biopsy
______ Alternate Therapy
______ OTHER (SPECIFY: ____________________________)
______ DON'T KNOW / NOT SURE

78. At what age do you think that a woman should begin getting a Pap smear?

PLEASE SPECIFY AGE: ____________________________________________________

______ DON'T KNOW/NOT SURE

79. How often do you think a woman your age should get a Pap smear? (CHECK ONE)

______ Once or more a year.
______ Once every two years.
______ Only during the child bearing years.
______ Only if she feels she has a problem.
______ DON'T KNOW / NOT SURE. (DO NOT READ)
80. Please choose the one statement that best reflects your intent about getting a Pap smear (CHECK ONE)

_______ I have not even thought about getting a Pap smear. (PRECONTEMPLATION)

_______ I have had a Pap smear in the past, but am not thinking about getting another one. (RELAPSE CONTEMPLATION)

_______ Why? ______________________________________________________

_______ I know I need to think about getting a Pap smear someday, but probably not in the next year. (CONTEMPLATION)

_______ Why? ______________________________________________________

_______ I have never had a Pap smear, but I am planning to make the appointment to get a Pap smear in the next year. (PREPARATION)

_______ I plan to make an appointment to get a Pap smear within the next three months. (ACTION)

_______ I plan to continue getting Pap smears yearly. (MAINTENANCE)

_______ DON'T KNOW / NOT SURE (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW)

81. Do you agree or disagree with each of the following statements?

(DO NOT READ RESPONSES - CHECK ONE ANSWER FOR EACH STATEMENT PLEASE INFORM THE PARTICIPANT THAT YOU WILL BE READING THE ANSWER OPTIONS AS THOUGH YOU ARE THE PARTICIPANT)

<table>
<thead>
<tr>
<th>Cervical Cancer</th>
<th>AGREE</th>
<th>DIS-AGREE</th>
<th>DON'T KNOW/ NOT SURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. If cancer of the cervix is found early, it can be cured.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>b. I have family or friends who encourage me to get Pap smears.</td>
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<td></td>
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<tr>
<td>c. A woman is more likely to get cancer of the cervix if she began having sex at an early age.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. A woman is more likely to get cancer of the cervix if she has had many sexual partners.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. A woman is more likely to get cancer of the cervix if her husband has had many sexual partners.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A woman is more likely to get cancer of the cervix if she is exposed to cigarette smoke.</td>
<td></td>
<td></td>
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<td>------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>g.</td>
<td>A woman is more likely to get cancer of the cervix if she has poor personal hygiene</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h.</td>
<td>A woman is more likely to get cancer of the cervix if she uses an intrauterine device (IUD).</td>
<td></td>
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<tr>
<td>i.</td>
<td>A woman is more likely to get cancer of the cervix if she uses birth control pills</td>
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<td>j.</td>
<td>A woman does not need to get Pap smears after she reaches menopause (i.e. stops having her periods).</td>
<td></td>
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<tr>
<td>k.</td>
<td>A woman does not need to get Pap smears after she stops having children.</td>
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<td></td>
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<tr>
<td>l.</td>
<td>Only women who are sexually active should get Pap smears.</td>
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<td>m.</td>
<td>I'm too busy to get Pap smears.</td>
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<td>n.</td>
<td>Cervical cancer is caused by a curse.</td>
<td></td>
<td></td>
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<tr>
<td>o.</td>
<td>Cervical cancer is caused by the will of God.</td>
<td></td>
<td></td>
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<tr>
<td>p.</td>
<td>Cervical cancer is caused by nature.</td>
<td></td>
<td></td>
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<tr>
<td>q.</td>
<td>Cervical cancer is caused by what you eat (i.e. bad foods, processed foods, balance of hot and cold).</td>
<td></td>
<td></td>
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<tr>
<td>r.</td>
<td>Cervical cancer is caused by the environment (i.e. pollution, chemicals, modern technology, radiation, etc.).</td>
<td></td>
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<td>s.</td>
<td>Cervical cancer is caused by bad luck.</td>
<td></td>
<td></td>
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<tr>
<td>t.</td>
<td>Cervical cancer is caused by bad luck in the family.</td>
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<td>u.</td>
<td>Cervical cancer is caused by spirits.</td>
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<tr>
<td>v.</td>
<td>Cervical cancer is caused by fate.</td>
<td></td>
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<tr>
<td>w.</td>
<td>Cervical cancer is caused by ancestors.</td>
<td></td>
<td></td>
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</tbody>
</table>
x. Cervical cancer is caused by sins from present life.

y. Cervical cancer is caused by sins from past life.

z. Cervical cancer is caused by something in the air.

82. Do you agree or disagree with each of the following statements?
   (DO NOT READ RESPONSES - CHECK ONE ANSWER FOR EACH STATEMENT
   PLEASE INFORM THE PARTICIPANT THAT YOU WILL BE READING THE ANSWER OPTIONS AS
   THOUGH YOU ARE THE PARTICIPANT)

<table>
<thead>
<tr>
<th>AGREE</th>
<th>DIS-AGREE</th>
<th>DON’T KNOW/NOT SURE</th>
</tr>
</thead>
</table>

   a. If I were to need cancer tests or treatment, there are people I could talk to about my feelings and concerns.

   b. Cancer treatment that is unpleasant or painful is worth getting if it would help me to live longer.

   c. If cancer is found early, it can be cured.

   d. If I had cancer, I would want to know that I have it.

   e. If I had cancer, I would want my family to know I have it.

   IX  CANCER INFORMATION: “Next, I would like to ask you some general questions about cancer.”

X. DEMOGRAPHICS: “I am now going to ask you some demographic questions.”

83. When were you born? Month ___________________ Year ____________
84. What is your marital status? Are you . . . (PLEASE CHECK ONE)

- Single
- Married
- Divorced
- Separated
- Widowed
- Living as married
- DON'T KNOW / NOT SURE/REFUSES TO ANSWER (DO NOT READ - ONLY MARK IF RESPONDENT DOES NOT KNOW OR REFUSES TO ANSWER).

85. What languages are you most comfortable speaking? (PLEASE CHECK ONE)

- Only English
- Mostly English
- Both English and (ETHNIC LANGUAGE) equally
- Mostly (ETHNIC LANGUAGE)
- Only (ETHNIC LANGUAGE)

86. Have you ever participated in a survey similar to this one?

- YES
- NO
- DON'T KNOW/NOT SURE

87. If so, with whom and when:

_________________________________________________________________________
_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________
“I am finished asking the interview questions. Is there anything you would like to add? Is there anything else you want to say?”

“Thank you very much for taking the time to answer these questions. Your answers will help us to provide more health information and services to Asian and Pacific Islander women in the community. This will help keep women healthy for themselves and for their families.”
REFERENCES


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Meinhardt, K., S. Tom, et al. (1984). Santa Clara County Health Department Asian Health Assessment Project. San Jose, CA, Santa Clara County Health Department, Division of Mental Health Services.


Thorburn, S., J. Kue, et al. (2012). "'We don't talk about it' and other interpersonal influences on Hmong women's breast and cervical cancer screening decisions." Health Education Research Epub.


