

## **Culture**

### **Introduction**

Culture is a set of shared and socially transmitted values passed through generations as learned beliefs and behaviors.<sup>1,2</sup> The concept of culture carries with it the idea that people who interact on a regular basis know the same unwritten rules and criteria for social life that confer status as a member of the group.<sup>3</sup> Groups of individuals with similar heritage, usually based on race or ethnicity, tend to share cultural characteristics and address problems in approximately the same way.

Despite significant efforts over past years, ethnic and racial minority groups in the U.S. continue to experience excess rates of morbidity and mortality from breast cancer.<sup>4</sup> Migrant studies of Asian American women and Hispanics/Latinas have shown that breast cancer rates change when women move to a new country, providing evidence for possible environmental and lifestyle risk factors.<sup>5-7</sup> Moreover, these lifestyle changes may reflect different levels of acculturation.<sup>8,9</sup> Since fewer than 5 percent of cancers can be attributed to genetic causes, lifestyle and environmental factors, which are informed by culture, appear to be the more salient causative factors.<sup>10</sup>

Cultural differences between the myriad of ethnic groups in the United States greatly impact health care delivery and effectiveness. Cultural factors are increasingly recognized as being important in health disparities, including influences on breast cancer screening behaviors, decisions about breast cancer treatment, and quality of life. This chapter focuses on the evidence for the association

between cultural factors and breast cancer among ethnic and racial minority groups in the United States, including African Americans, American Indians/Alaska Natives, Hispanics/Latinas, Asian Americans, Pacific Islanders, and immigrant populations, who may overlap with most of the preceding categories.

Increasingly, researchers are making a distinction between race, ethnicity, and culture. For example, ethnicity is defined as subgroups within a larger society who share a common origin and practices, while ethnic identity is an individual's perception of group membership, including the importance of belonging to this group, and actual participation in group practices and customs.<sup>11-14</sup> As a result, many investigators are focusing their research on disaggregated subpopulations, as well as different generations within subpopulations.<sup>15-17</sup>

However, not all subgroups have been equally studied; studies on immigrant populations have focused primarily on Mexican, Chinese, Japanese, Vietnamese, and to a lesser extent, Korean immigrants.<sup>18</sup> With the advent of the Community Network Programs (formerly the Special Population Networks) funded by the National Cancer Institute through the NCI's Center to Reduce Cancer Health Disparities (CRCHD), 25 networks are doing research and education focused on other disaggregated subpopulation groups, including Samoan and Tongan (Pacific Islander groups), and Puerto Rican, Cuban, and Guatemalan (Latin groups), and others.

### **Concept/Exposure Definition**

The state of health within any minority population in the United States cannot be fully addressed

without assessing the effects of racism, personal prejudice, marginalization, oppression and acculturation (the extent to which minority-group individuals adopt the beliefs, values, and behaviors of the majority group). For example, the forced relocation of Africans to this country for slave labor resulted in severe acculturation and racism influences that still exist today. As another example, over 560 federally-recognized American Indian/Alaska Native tribes and over one hundred state-recognized tribes each have their own unique cultures, languages, and health care needs and patterns. Historical trauma and contemporary abject poverty impact their health, however, as do strong family ties and respect for tribal history and elders.

Immigrant and refugee populations are often subjected to discrimination by structural systems, including the health care system, due to their lack of English proficiency and lack of understanding of majority U.S. culture. In addition, most immigrants arrive with no historical basis for understanding the paradigm of western medicine, and often distrust the U.S. government. This can translate into distrust of health care providers and the health care system. This distrust is also high among U.S.-born racial/ethnic minorities,<sup>19, 20</sup> and they experience differential care due to their membership in racial/ethnic groups of color.<sup>21</sup>

Cultural beliefs and values regarding the nature of reality (spiritual, material), interpersonal relationships and behaviors (individual, group), and the nature of time (past, present, future) create motivational force.<sup>22</sup> Culture provides the underlying rationale or impetus to behave and think in a certain way and ultimately, influences an

individual's perceptions, cognitions, affect, and behaviors.<sup>23, 24</sup> Previous research has demonstrated that ethnic and racial groups differ in terms of beliefs and values related to spirituality and religion, interpersonal relationships, behavior orientation (individual or collective), and temporal orientation.<sup>23-26</sup> For example, cultural beliefs and values for the majority group, European Americans, include individualism, materialism, and future temporal orientation, whereas cultural values for African Americans and Latinos/Hispanics include interdependence, collective responsibility, spirituality, and present temporal orientation.<sup>24, 27-30</sup> Cultural beliefs of American Indians/Alaska Natives include tribal-specific spirituality that connects all living things and nature, including what western scientists consider to be inanimate objects, such as mountains and water.

Additional factors have been considered when working with immigrant populations. For example, there is evidence that acculturation is important to breast cancer risk-related factors in groups who immigrate to the U.S. Researchers have developed a number of measures of culture and acculturation for various racial and ethnic groups, but the concept remains poorly conceptualized and defined.<sup>31</sup> Currently used acculturation scales usually include questions about country of origin, years living in the host country, and language use, preference and proficiency,<sup>18</sup> whereas measures of culture assess beliefs, values, and behaviors related to religion and spirituality, temporal orientation, and collectivism.<sup>32-34</sup> Because of logistic or cost constraints associated with collecting more comprehensive measures of culture and

acculturation, human health studies frequently use more easily available cultural indicator variables such as race, birthplace, length of residency in the U.S., English language proficiency, and/or citizenship status.<sup>35</sup> Although the concept of acculturation is fraught with both conceptual and construct issues, some researches have used creative methods to indirectly estimate proxies for acculturation, although these seem to indicate less about culture than about familiarity with and ability to navigate our health care system. Some studies have also incorporated folk health beliefs to assess the level of culture and acculturation for ethnic and racial minority groups, including immigrants. Because researchers use different definitions of culture and acculturation, it is difficult to make comparisons between studies.

### **Biologic Plausibility**

Breast cancer incidence is lower among most groups of minority women, but the disease is also more deadly. For example, despite lower incidence, mortality from breast cancer is significantly higher among African American women compared to white women.<sup>4</sup> Among American Indian/Alaska Native women, mortality rates are high and incidence is still increasing.<sup>36, 37</sup> Native Hawaiian women have the highest breast cancer incidence rate in Hawaii; nationally they rank second to white women, and the breast cancer mortality rate of Native Hawaiian women approaches that of their African American counterparts.<sup>29, 38, 39</sup> As the mortality and morbidity rates have decreased for U.S. white women over the past twenty years, minority women have gained limited benefit, and in some cases have lost earlier gains, from the progress

made in breast cancer diagnosis, prognosis and treatment.<sup>40-42</sup>

Several hypotheses have been put forth to explain the relationship between cultural factors and breast cancer among ethnic and racial minorities in the U.S. As noted earlier, immigrant studies report that women migrating to a country with higher risk of breast cancer have a higher incidence of breast cancer than women in the country they leave behind. These immigrant women may change their lifestyle in ways that increase risk; migration may also profoundly change a woman's exposure to environmental contaminants and her breast cancer risk. Newer immigrant groups may have different cultural beliefs or knowledge that makes them less likely to seek screening or treatment for breast cancer. Minority immigrants may not have the same access to medical care as their non-immigrant counterparts due to language, but may suffer the same barriers of cultural differences, low socioeconomic status, lack of insurance, or discrimination.<sup>43-45</sup>

Cultural beliefs and values for all non-European American groups may influence motivations and decisions about cancer screening, strategies used to make decisions about cancer treatment, and resources used to cope with cancer diagnosis. For instance, individuals may be motivated to engage in cancer screening depending on whether cancer, and cancer risks, are perceived as controllable or uncontrollable, if their focus is on short- or long-term outcomes, and whether the strategy serves individual or group interests. Attention to a particular aspect of these attributes (e.g., greater focus on short-term outcomes, preference for serving group interests) is likely to be influenced by cultural

beliefs and values. For example, religious and spiritual values may influence perceptions of control,<sup>46,47</sup> and temporal orientation may influence the extent to which individuals focus on the short- or long-term outcomes of cancer screening.

While there is a growing body of literature about the relationship of breast cancer in Ashkenazi Jewish women and a founder gene mutation, little is known about the genetics of breast cancer in other minority populations. The historical impacts of dramatic and systematic acculturation events have certainly constrained the gene pools of several minority populations, which may also have led to biological susceptibilities. For instance, the concept of a genetic bottleneck that occurred during the Middle Passage of Africans to America<sup>48</sup> is cited as a contributor to the prevalence of diseases such as sickle cell in the U.S. black population. This concept can also be associated with the decimation of 50 to 90 percent of the American Indian/Alaska Native populations by the end of the nineteenth century, as European diseases reached epidemic proportions among people who had no herd immunity to them.<sup>49-57</sup>

It is well documented that “triple negative” breast cancer (tumors negative for estrogen, progesterone, and HER2/neu, and typically diagnosed at young age) occurs more frequently among African American women.<sup>58-60</sup> Few American Indian/Native Alaskan breast cancer survivors have taken part in genetic testing for BRCA1 or BRCA2, but of those few who have, none have shown this mutation.<sup>61</sup>

## **Critical Review of the Literature, by Outcomes in Breast Cancer Continuum**

### ***Incidence***

Limitations in cancer data based on nativity, language, or culture--along with poor conceptualization of culture and inaccurate use of the concepts of race and ethnicity on the part of researchers--hamper research on the effects of cultural factors on cancer incidence and mortality.<sup>1</sup>

Generally speaking, it is difficult to obtain information on cancer incidence data based on nativity, language, or culture for certain ethnic groups because few sources that collect these data are available to researchers. The North American Association of Central Cancer Registries (NAACCR) is working with its member researchers, registries and organizations to improve reporting accuracy of race and ethnicity, and address the need for inclusion of important socioeconomic measures and smaller geographic identifiers, while maintaining and protecting patient confidentiality. However, challenges remain.

To meet the need for improved surveillance of cancer status in isolated tribal populations, several partnerships have been established that can confidently report that cancer incidence in these populations has dramatically increased, though cancer was once quite rare. Through partnerships with NCI's Community Network Programs and similar partnerships funded by other agencies, in 2007 improved data on the incidence of cancer in American Indian/Alaska Natives is being reported. The federal 2007 Report to the Nation on American Indian/Alaska Native cancer incidence is the first time there has ever been such an effort

to improve the accuracy of this data. Based on these preliminary data, Alaska Natives have the highest age-adjusted breast cancer incidence rate (139.1), followed by Northern Plains (115.4), and Southern Plains (112.9). The average age-adjusted breast cancer incidence rates for American Indians/Alaska Natives for the total U.S. is 85.8. The Pacific Coast rate is slightly lower, at 80.1. In comparison, the total U.S. breast cancer incidence rate is cited in this report as 62.9.<sup>62</sup> This document finally clarifies both the regional differences and under-counting of incidence data from previous federal publications.<sup>63-65, 65, 66</sup>

Cancer for American Indians/Alaska Natives is under-reported in most state and federal databases, often due to racial misclassification.<sup>67-75</sup>

Misclassification occurs for a number of reasons<sup>76</sup> and has been one of the most difficult obstacles in the path of accurate and informative data for the American Indian/Alaska Native population.<sup>77</sup>

Hence, improving prevalence estimates must be a priority for policy efforts.

Mack et al. examined breast cancer among Hispanics/Latinas in Los Angeles County, using social security numbers to estimate age of migration to the U.S. They found that Hispanics/Latinas had a lower risk of developing breast cancer than non-Hispanic white women and that Hispanics/Latinas who immigrated as children had only a slightly higher risk than those who immigrated as adults.<sup>78</sup> Eschbach and colleagues used SEER and census track data to investigate whether cancer incidence among Hispanics/Latinas increased with acculturation. Using lower percentage of Hispanic/Latino

residents and higher Hispanic/Latino income within a census tract as a proxy for increased levels of acculturation, they found breast cancer rates to be significantly higher among Hispanics/Latinas residing in census tracts deemed to be high-acculturation than those who lived in census tracts deemed to be low-acculturation.<sup>79</sup>

A population-based case-control study in California found that foreign-born Hispanics/Latinas had a 50% lower breast cancer risk than U.S. born Hispanics/Latinas.<sup>9</sup> Furthermore, risk was lower among Hispanic/Latina immigrants who moved to the U.S. at age 20 and those who spoke mostly Spanish.<sup>9</sup> This study also supported the idea that differences in reproductive factors, such as parity and breast-feeding, could partially explain increased risk among more acculturated Hispanics/Latinas.<sup>9</sup> However, when Abraido-Lanza and colleagues used National Health Interview Survey (NHIS) data of Hispanics/Latinas to assess the association between acculturation and screening for cancer of the cervix, they found the association to be inconsistent.<sup>80</sup> Other researchers investigating breast cancer risk among immigrant Hispanic/Latina and Asian populations also found increased risk to be associated with increased levels of acculturation.<sup>6, 29, 81</sup>

Many of these conflicting findings may be due to the lack of consensus on the definitions of culture as well as acculturation, so attributions of causation to these concepts will be inconsistent at best.

In addition, several special studies have examined the role of acculturation in the development of

breast cancer among Asian American and Pacific Islander populations. A 1996 population-based case-control study of breast cancer among Chinese-, Japanese- and Filipino-American women in selected areas of California and in Oahu, Hawaii concluded that parous Asian American women had a significantly lower breast cancer risk over nulliparous Asian American women. However, other reproductive factors, such as duration of breast-feeding or average age at menarche between U.S.-born and foreign-born Asian American women account for only non-significant differences in breast cancer risk, suggesting that lower breast cancer rates in these Asian populations may be primarily due to other environmental and/or lifestyle factors.<sup>82</sup> Wu and colleagues examined tofu (soy) consumption among Chinese-, Japanese- and Filipino-American women in two regional areas of Northern and Southern California, and Oahu, Hawai`i. They found a two-fold greater intake of tofu among Asian immigrant women over U.S.-born Asian American women, and observed a protective effect against breast cancer with increased tofu intake.<sup>83</sup> A follow-up investigation conducted by Wu and colleagues in 1998 in which they analyzed the results of their 1996 study with those of three other studies conducted in China, Singapore and Japan – while indicating a possible relationship between breast cancer risk and soy intake – was inconclusive.<sup>84</sup>

Tseng and colleagues recently published a study on foreign-born Chinese American women examining the relationship between acculturation and breast density, which is associated with increased breast cancer risk. Using a survey instrument to elicit information on the

respondents' demographic, cultural, and lifestyle factors, including reproductive history, these investigators found a positive correlation between higher acculturation levels and denser breast tissue. They also found that more highly-acculturated Chinese American women tended to have higher education levels, were more likely to be born in Hong Kong or Taiwan (versus The People's Republic of China), had longer U.S. residence, and were more likely to have immigrated at younger ages. Although the study was limited by a relatively small sample size, foreign-born Chinese American women's reproductive risk factors (including lower age at menarche, fewer live births, higher age at first live birth, and shorter duration of breast-feeding) also correlated with increased levels of acculturation.<sup>85</sup> Despite these findings, Tseng and colleagues report that differences in lifestyle and reproductive factors could not explain the acculturation-breast density association. Further, these investigators did not find an increased breast cancer incidence among women with higher breast density in this small study sample.

Of all U.S. Asian populations, Japanese Americans have the lowest percentage of first-generation immigrants, and they are the only U.S. Asian ethnic group with a negative population growth. Now in their fifth and sixth generations in the U.S., Japanese American women are more likely to be born in the U.S. and are the most acculturated of all U.S. Asian populations.<sup>30</sup> In a detailed study of breast cancer by race and ethnicity in Los Angeles (LA) County, California in women age 50 and above, Deapen and colleagues found the five highest breast cancer incidence rates to be in (1) non-Hispanic white

women, (2) followed closely by Japanese American women, and (3) Filipina American, African American, and Chinese American women. These investigators also found Japanese American women to have the sharpest rising breast cancer rates over all other women in LA County.<sup>86</sup>

In American Indian/Alaska Native populations, breast cancer incidence and mortality rates vary significantly among tribes and geographic regions.<sup>87-91</sup> The distinctive patterns of low incidence and mortality rates in Southwestern tribes and high rates in Northern Plains, Southern Plains and Alaska require research into etiology, access issues and cultural contributors to the observed patterns. Alaska, for example, now has rates of breast cancer equivalent or slightly higher than the U.S. non-Hispanic white incidence rate.<sup>62</sup> Among American Indian/Alaska Native populations, studies also show that people anecdotally report cancer clusters, but the small populations of the communities confound these reports because they do not reach statistical significance.

Studies have shown that cultural beliefs and values may be important to behaviors that may affect breast cancer risk. For American Indian/Alaska Native women, the phrase “brown and round” indicates a cultural acceptance of obesity, possibly culturally transmitted over generational cycles of feast and famine (tribes historically had population counts recorded on blankets documenting years of thin and fat). Future temporal orientation – which, as noted above, has been found to be more common among whites and less common among some minority groups – has been positively associated

with health promotion behaviors, such as exercise.<sup>92-94</sup>

### **Screening**

Nativity, immigration history, culture, and level of acculturation impact health screening practices of individuals and communities. While Chen and colleagues<sup>95</sup> found no significant relationship between acculturation and knowledge of breast cancer risk among 135 Chinese women in the New York metropolitan area, they did find a two-fold association between women with higher income/higher education and increased knowledge of breast cancer risk. However, most studies report an association between higher levels of acculturation and increased breast cancer screening for Asian American, Pacific Islander, Hispanics/Latinas and other U.S. minority populations.<sup>26, 96, 97</sup> Specifically, being proficient in English, having been born in the U.S., having moved to the U.S. at a young age, or residing longer in the U.S. are associated with increased mammography and clinical breast exams for Asian American and Pacific Islander women and Hispanics/Latinas.<sup>9, 35, 92-94, 98-122</sup>

Nativity, immigration history, legal status, and citizenship are also important factors in breast cancer screening among immigrant Hispanics/Latinas and Asian American women. Several studies have found that being without legal status and being foreign born serve as barriers to breast cancer screening among both of these groups.<sup>8, 9, 100, 101, 104, 107, 123-127</sup>

In some ethnic and racial minority groups, cultural factors appear to be important to health beliefs and cancer-related behaviors. In research with African American women recruited from public housing

facilities, present temporal orientation was positively associated with greater perceptions of barriers to mammography and was negatively associated with mammography utilization.<sup>16</sup> Other work has shown that future temporal orientation is positively associated with participation in genetic counseling and testing for inherited breast cancer risk among African American women at increased risk for having a BRCA1 or BRCA2 mutation.<sup>34</sup> Although individualism and collectivism have not been directly measured in prior studies on cancer screening, results suggest that collectivist values influence screening behaviors. For example, greater levels of social integration and the size of one's social network were associated with adherence to breast and cervical cancer screening among Mexican, Cuban, and Central American women.<sup>128, 129</sup>

Additionally, cultural beliefs often have considerable influence on U.S. minority women's health behaviors and decision-making. A number of studies have reported that fatalism and fear serve as barriers to screening practices in many communities.<sup>24, 28, 99, 129-136</sup> The misconception that symptoms must follow disease ("I don't feel sick, so I must be healthy.") has also been established as a barrier to screening.<sup>104, 128, 137, 138</sup> The additional fear of becoming a burden on family members could also discourage breast cancer screening.<sup>44, 110, 139, 140</sup> Other studies have pointed to modesty about the body as a salient barrier to breast screening among many Hispanic/Latina, Asian American, and Pacific Islander subgroups, including Vietnamese, Chinese, Filipino, Asian-Indian, and Asian-Islamic women.<sup>44, 113, 114, 117, 137, 141-149</sup> Although modesty

was not found to be a barrier among Japanese American women, caution must be taken in interpreting these results, because the study sample was small, at a single site<sup>150</sup> and also because the percentage of foreign-born Japanese in the U.S. is on the rise, one-third having arrived since 2000.<sup>151</sup> Many Hispanics/Latinas and Asian American women, especially immigrants, as well as other minority or poor women, report distrust of the U.S. health care system, and disrespectful or insensitive treatment by health care workers as significant barriers to breast cancer screening and re-screening.<sup>21, 131, 152-154</sup>

Despite these barriers, numerous studies have demonstrated that community-specific, language-appropriate and culturally-tailored interventions are successful in increasing breast cancer screening, specifically among immigrant Asian American, Pacific Islander, Hispanic/Latina and American Indian/Alaska Native communities, as well as other populations who contend with health disparities.<sup>25, 43, 102, 121, 155-179</sup> Such interventions frequently include low-literacy resource materials developed in the target population's language, rather than by translating materials from English. These materials also incorporate cultural values, themes, and symbols to address the importance of screening practices in a manner that is both relevant and respectful to the target population.<sup>25, 102, 105, 163, 164, 167, 180-185</sup> Kreuter and colleagues<sup>186</sup> found that mammography utilization and fruit and vegetable consumption were significantly greater among African American women who received health magazines that were tailored to cultural and behavioral beliefs compared to those who did not receive these magazines and women in the control group.

In contrast, Becker et al.<sup>187</sup> found that the cultural association of cancer with bad spirits that must not be spoken of, compounded by distrust due to cultural injustices within the health care system, prevented effective screening practices in specific American Indian/Alaska Native populations. In fact, only 52 percent of American Indian women aged 40 and older reported having mammograms within the previous two years, compared with 70 percent of white women.<sup>188</sup> The Native WEB program (Women Enjoying the Benefit of screening) was developed to increase access to much-needed screening in Native American/Alaska Native communities and to address these women's request that they be examined by other women.<sup>189</sup>

Critical to the success of any culturally-tailored cancer screening intervention is identification of the specific population group for whom the intervention is targeted. While U.S. cancer surveillance data are still most often collected and reported by aggregate race/ethnicity, each of the more than 30 subpopulation groups within the category of "Asian American"<sup>190</sup> and the more than 30 subpopulation groups within the category of "Pacific Islander"<sup>191</sup> has its own distinct culture, beliefs and practices. Approximately 2,000 Asian and Pacific Island languages and dialects are spoken worldwide. In California, more than 45 distinct Asian and Pacific Island ethnic groups speak 28 different languages and many more unique dialects.<sup>192</sup> Of the ten most commonly spoken languages in California, six are Asian.<sup>193</sup> Similarly, California's Latino/Hispanic populations originate from more than 22 Spanish-speaking countries (including the U.S.), plus Puerto Rico. Spanish is the second most

commonly spoken language in the U.S. But while many believe there is a single Spanish language, numerous dialects and regional variants are spoken throughout the world and across the U.S. Diversity, not only across the primary U.S. race/ethnic population groups, but also within each subpopulation, is vast. Within American Indian/Alaska Native communities, over 217 different languages are spoken.<sup>65</sup> Thus, disaggregation of race/ethnic groups in cancer research and along the cancer care continuum is critical.<sup>92, 194-196</sup>

Today, among the most successful interventions across the breast cancer care continuum are those being developed by investigators in partnership with communities via community-based participatory research. The California Breast Cancer Research Program has led the way in promoting this type of research, and now many traditional funders, including the National Cancer Institute, American Cancer Society, Susan G. Komen for the Cure, and others incorporate funding mechanisms to support such partnerships.

It appears that efforts have begun to examine the role of culture on screening practices among African American, American Indian/Alaska Native, Asian American/Pacific Islander and Hispanic/Latina women. Additional studies need to be conducted among American Indian, Alaska Natives, Native Hawaiian, other Pacific Islanders and the smallest Asian American communities, such as Bangladeshi, Hmong, Indonesian, Iwo Jiman, Malaysian, and Nepalese,<sup>151</sup> along with the appropriate methodology and instruments to study these populations. Barriers have been identified, as has the need for more culturally appropriate

means of increasing breast cancer screening among minorities. However, despite targeted efforts at intervention with culturally-appropriate strategies,<sup>180-182</sup> the underutilization of breast screening still persists, and much more needs to be done to better define the concepts of race, culture, ethnicity, and acculturation to be able to compare the findings from these various studies. The studies conducted thus far leave lingering concerns of the impacts of low screening among immigrants, and other minority and medically underserved populations.

### **Diagnosis**

Very little research has been dedicated to examining the role of culture on breast cancer diagnosis and post-screening follow-up among African American, American Indian/Alaska and Hawaii Natives, Asian American/Pacific Islanders and Latinas. However, previous research has shown that religious and spiritual beliefs influence decisions about seeking treatment for breast cancer symptoms.<sup>44, 197-199</sup> For example, Lannin and colleagues<sup>200</sup> found that religious and spiritual beliefs—such as prayer about cancer—can lead to healing, but they were also associated with greater delay in seeking treatment for breast cancer symptoms. African American women were significantly more likely than Caucasian women to endorse these beliefs.<sup>197</sup> Similar findings have been reported for Hispanics/Latinas and many Pacific Islander communities;<sup>201</sup> faith in God was influential in determining the length of time between symptom recognition and seeking care in Latino/Hispanic men and women.<sup>110</sup> Several studies have documented the perception of cancer in American Indian/Alaska

Native women and the associated cultural barriers that prevent timely diagnosis.<sup>187, 202-209</sup>

In an analysis of SEER data, Hedeem et al. reported that Asian-born American women have a greater percentage of tumors larger than 2 cm than both U.S.-born Asian-American women and white women, suggesting that birthplace may be correlated with stage of diagnosis. Hedeem found the same results for women born in Latin America and living in the U.S., compared with U.S.-born Latinas and non-Hispanic white women.<sup>210</sup> The authors reasoned that lower utilization of breast cancer screening by foreign-born Asians and Latinas is likely to be responsible for the observed differences in tumor size. This further lends support to the hypothesis that more acculturated U.S.-born women tend to get screened more and, consequently, are less likely to be diagnosed with larger tumors.<sup>210</sup> However, the interpretation of the results may be affected by the relatively large proportion of Asians and Latinas in the cancer registry sample with unknown birthplace who were excluded from the analysis. Recent findings suggest that patients in the registry with unknown birthplace are twice as likely to be U.S.-born than patients with known birthplace.<sup>211</sup>

Later stage at diagnosis may result not only from screening underutilization but also fear of the disease. Two qualitative studies of South Asian and Chinese American immigrant women found that women are likely to delay seeking follow-up assessment after screening positive for a breast lump for fear of the disease and the real or perceived impact it would have on their lives.<sup>130, 212</sup> These findings underscore the importance of targeted health education and outreach to allay

fear and misconceptions among these subpopulations.

Similarly, Moy and colleagues<sup>213</sup> surveyed a small group of Asian, African American and Hispanic/Latina women to determine their cultural perspectives regarding barriers to repeat mammography. They found fatalism among some African American women precluded repeat mammography for fear of finding a breast cancer, which they believed would lead to imminent death. Several studies confirm high rates of late-stage diagnosis among African American women.<sup>27, 214, 215</sup> Wojcik et al.<sup>216</sup> determined that equalizing mammography utilization among African American, white and Hispanic/Latina women would also equalize survival among these groups. However, biologic differences in hormone receptor status and histology among African American women diagnosed with breast cancer, as compared to their non-Hispanic white counterparts, complicate this assumption, especially regarding younger African American women.<sup>194, 217</sup>

In summary, stage of disease at diagnosis is highly correlated with screening practices; women who undergo routine breast cancer screening are more likely to be diagnosed with early stage disease.<sup>27, 213-216</sup> However, there is evidence suggesting that cultural beliefs and values may also delay both diagnosis and treatment, as misconceptions and fear about breast cancer and culturally-defined roles of women in the family may be a barrier to adherence to follow-up guidelines after receiving screening services, over and above individual attitudes and knowledge about mammography and breast cancer.<sup>44, 140, 145, 148, 218</sup> More research is

needed to understand cultural beliefs that may affect minority or immigrant women's decisions to delay follow-up after an abnormal or positive screening result.<sup>219</sup> Accordingly, future outreach efforts should not be limited to promoting screening but should also encourage post-screening follow-up after diagnosis. As stated above, culturally tailoring these outreach and education efforts via a community-based participatory research effort will provide the greatest opportunity for success.

### ***Treatment***

Culture may influence both the timing and type of breast cancer treatment received by African American, Hispanic/Latina, Asian American, Pacific Islander, Native Hawaiian, and American Indian/Alaska Native patients. These groups, and poor and uninsured patients from all population groups, tend to receive substandard treatments more often than their high-socioeconomic status, insured, non-Hispanic white counterparts.<sup>152, 220-225</sup> Katz found that women who prefer to speak Spanish in Los Angeles were more likely to experience a delay of three months or more from diagnosis to surgical treatment, and were the most likely to experience lower levels of satisfaction with their treatment, compared to non-Hispanic whites, African Americans, and Latinas whose primary language is English.<sup>226</sup> Latina/Hispanic, Asian American, and Pacific Islander women have significantly lower rates of breast conserving surgery compared to non-Hispanic white women.<sup>195, 226-235</sup> In fact, Asian American and Pacific Islander women are two to three times more likely than non-Hispanic white women to undergo mastectomy, a difference not completely

attributable to sociodemographic and clinical factors.

Based on preliminary data from the “National Native American Cancer Survivors Support Network,” American Indian/Alaska Native patients report finding access to quality care difficult at best. Examples of findings from Native breast cancer survivors from 1996 to 2000 include that none had access to a second opinion for their diagnosis; only one woman who used Indian Health Service Contract Health Service was offered breast conserving surgery; in some regions, no established treatment protocols were followed and no follow-up recommendations were sent back to the woman’s home village; and average interval from the time of diagnosis ranged in various geographic regions from three to nine months.<sup>76, 174, 202, 203, 236-239</sup>

However, researchers have only recently begun to explore the role of cultural influences on treatment for breast cancer to determine if there is a link between culture and observed treatment patterns across racial/ethnic groups.

Several investigators have explored the reasons Asian American and Pacific Islander breast cancer patients tend to receive different treatments than other groups. Goel et al. conducted a large retrospective cohort study of foreign-born Asian American and Pacific Islander women, who tend to be less acculturated than their U.S.-born counterparts.<sup>227</sup> Based on national SEER data, they found foreign-born Asian American and Pacific Islander women were more likely to undergo mastectomy over breast conserving surgery than were U.S.-born Asian American, Pacific Islander, and non-Hispanic white women.

The investigators offered several explanations, though none have been tested. One possible explanation is that providers may prefer mastectomy for their foreign-born Asian American and Pacific Islander patients, due to concerns about non-adherence to recommended adjuvant therapy among this population. Alternatively, Asian American and Pacific Islander women may place greater value on immediate treatment (mastectomy), which does not require adjuvant therapy.<sup>227, 232</sup> In a study investigating Chinese American women who underwent surgery for breast cancer and their providers, Killoran and Moyer<sup>240</sup> determined that a majority elected to undergo modified radical mastectomy, even when breast conserving surgery was an option. This finding held regardless of the women’s age, educational attainment, income level, and legal status. The women believed mastectomy to be safer, and some reported feeling pressured to accept breast conserving surgery. Physicians and patients alike felt miscommunication was a major barrier for those women whose English proficiency was limited; and language barriers were cited as having led to changing or early stopping of treatment regimens.

A few qualitative studies have also pointed to cultural values as an important variable in treatment preferences among Asian American and Pacific Islander women, many of whom have strong spiritual beliefs that breast cancer diagnosis and outcome are in God’s control (“karma”).<sup>131, 232</sup> This may lead to Asian American women being less inclined to actively participate in treatment decision-making, leaving the decision to their provider.<sup>131</sup> Through these qualitative studies, some theories emerged in helping to understand

## *Identifying Gaps in Breast Cancer Research*

breast cancer treatment decision-making processes through a culturally sensitive lens, based on key values that cut across many Asian cultures. First, Asian American women may want to remove the possibility of worry about a recurrence, thus selecting mastectomy, which does not require additional treatments. Second, mastectomy for treatment of early stage breast cancer usually minimizes the period of disability and affords the patient increased ability to retain obligatory roles and family duties. Third, many Asian cultures encourage self-sacrifice, particularly among women; thus, Asian American women may choose mastectomy, which is less disruptive for their loved ones. Finally, self-sufficiency is also highly valued in many Asian cultures. In that regard, selecting breast conserving surgery would mean that the woman would be less self-sufficient during the multiple treatments periods, forcing her to accept outside assistance, which entails an obligation for future repayment of the favor.<sup>232</sup> Overall, these qualitative studies are critical in establishing the range of beliefs and attitudes among various Asian American populations. Quantitative methods can then be used to examine the extent to which these beliefs and attitudes truly impact health in a population; at least two research groups (Kagawa-Singer and colleagues at UCLA, and Gomez and colleagues at NCCC) are currently undertaking such studies.

Breast cancer treatment decision-making among Hispanics/Latinas also differs from other groups. Maly and colleagues found that Latinas may not receive breast conserving surgery due to decision making by family members.<sup>235</sup> Approximately 49 percent of less-acculturated Latinas and 18 percent of more-acculturated Latinas indicated that their

family members determined the final treatment decision, compared with less than 4 percent of African American and non-Hispanic white women. Furthermore, patients were less likely to receive breast conserving surgery when the family made the final treatment decision.<sup>235</sup>

Treatment delays experienced by American Indian/Alaska Native women may be caused by under-funding of the Indian Health Service, and may also be due to cultural factors. Native American breast cancer patients may need family assistance to care for children or elders in the family. Also contributing to delays is reliance on subsistence hunting, for example, among Alaska Native women. The Alaska Native breast cancer patient may delay traveling to Anchorage for treatment until the hunting season is over to help the community obtain food and to access appropriate shares of the food supply. A unique cause of treatment delay is the urbanization of the American Indian/Alaska Native populations, while their eligibility for health care referral remains on their reservations. Conversely, members of isolated tribal communities, especially in Alaska, often have to travel hundreds of miles for prescriptions they must refill in person, the cost of which must come from their personal budgets, which are already constrained by the levels of endemic poverty.

Collaboration with traditional healers must be considered as American Indian/Alaska Native patients communicate their desire to have healing ceremonies (which differ greatly among tribes) as part of treatment regimes.<sup>172, 173, 204</sup>

The co-morbidities that are highly prevalent in most of these minority populations—such as

obesity, diabetes and high blood pressure—often constrain the types of treatments available to these individuals. Co-morbidities will also make many minority patients ineligible for clinical trials, which provide the latest and often the best treatment options.<sup>241</sup> For example, 25 percent of Native American breast cancer patients enrolled in the "Native American Cancer Education for Survivors" (NACES) program are diabetic and about one-third have high blood pressure. Either or both conditions are likely to result in the patient being ineligible for a clinical trials.<sup>204</sup> In any case, clinical trials are rarely offered to these women. Although the barriers to participation are well known, there continues to be insufficient culturally acceptable recruitment strategies to address these barriers.<sup>203</sup>

Minority women who do take part in clinical trials may be misclassified. From April 2005 through 2007, approximately 1000 American Indian/Alaska Natives were asked if they have ever taken part in a cancer clinical trial. Data show 10 percent of the respondents are taking part. However, when checking cancer clinical settings, these individuals were not identified as American Indian/Alaska Native, due to racial misclassification. In an ongoing clinical trial,<sup>242</sup> protocols were modified to assure that cancer patients and families had sufficient information to make an informed decision. The high recruitment rate and lack of refusals in this study show that American Indians/Alaska Natives are willing to take part in clinical trials when the trials are set up in a culturally-appropriate manner.<sup>243</sup>

Culturally- and linguistically-appropriate interventions are needed to decrease the time

between diagnosis and treatment and to help ensure that women receive the most appropriate treatment. Efforts must also be made to look at ways to be more inclusive of minority populations in clinical trials in order to be able to determine whether new treatment options offer benefit across all populations.

### **Survival**

Virtually no information is available about the role of culture in survival after breast cancer among ethnic and racial minority groups. The limited literature available for Asian American and Pacific Islander women suggests that acculturation to western culture is associated with early diagnosis; presumably this contributes to better survival. However, beyond differences in stage at diagnosis, the impact of cultural factors on survival among breast cancer patients from ethnic and racial minority groups has not been systematically explored.

In a study using SEER data to compare breast cancer survival among Asian immigrants, U.S.-born Asian Americans and white women, there were no significant differences in survival by birthplace within each of the Asian subgroups (Japanese, Chinese, and Filipina) after adjusting for demographic characteristics, stage of diagnosis, and treatment.<sup>30</sup> The study was criticized, however, for using birthplace information from SEER data, which is missing for a greater number of U.S.-born than foreign-born patients. Exclusion of cancer cases missing birthplace information could potentially lead to a biased sample.<sup>195</sup> Conversely, a more recent study using SEER data comparing U.S.- and East Asian-born Chinese Americans reported significantly

lower five-year overall survival among the latter group.<sup>244</sup> These results suggest poorer survival rates among Asian-born women may be due to problems with access to health care due to language and cultural barriers, leading to delayed diagnosis and treatment. These two SEER studies with contradictory results make it hard to evaluate whether acculturation is correlated with better survival among Asian American women. Additional studies comparing more U.S.- and Asian-born American populations, as well as other populations with a portion of more recent immigrants, such as Hispanics/Latinas, will shed more light on this matter.

Interestingly, studies of survival across Asian American subgroups consistently reported that Japanese American women have better survival and are more likely to be diagnosed at an earlier stage.<sup>30, 195</sup> As noted in the Incidence subsection of this chapter above, Japanese Americans are the most acculturated of all U.S. Asian populations,<sup>30</sup> suggesting that acculturation may be correlated with better survival.

American Indians continue to have the poorest five-year relative survival from breast cancer in comparison to all other ethnicities in the U.S.<sup>245, 246</sup> The culture of past generations of American Indians/Alaska Natives dictated that the word cancer is often not even spoken and that the word does not exist in most dialects. A new project within the Navajo Nation is developing a Navajo language cancer glossary to correct prior translations that lumped cancer with descriptions of incurable illness. In addition, traditional roles that require women to make others their life's priority often negatively impact completion and

effectiveness of treatment, thereby contributing to mortality. For some, spiritual associations do not allow for ownership of the disease and patients may rationalize that detection and treatments are not valued since all events were predetermined by a Greater Being.<sup>187</sup> Educational outreach efforts, especially those utilizing visible survivors, will be necessary to overcome the fatalism attached to cancer.

In summary, few studies have touched upon the role of culture on breast cancer survival. The dearth of research studies, imprecise definitions of culture, and complex results indicate the need for more research to develop better methods to assess immigration and acculturation in population-based cancer registries and special studies to determine if and how these factors impact survival for all ethnic groups.

### ***Quality of Life***

Little is known about quality of life in ethnic and racial minority breast cancer survivors.<sup>247</sup> The studies that have been conducted in African American women have shown that levels of physical, social, and emotional functioning are relatively high among long-term African American breast cancer survivors; however, subgroups of women may have poorer functioning.<sup>248-251</sup> Not surprisingly, African American breast cancer survivors with malignant lymph nodes and those with recurrent disease reported significantly lower levels of quality of life compared to African American breast cancer survivors without these factors.<sup>249</sup> Ethnic differences in quality of life have also been reported among breast cancer survivors. Compared to Caucasian survivors, African

American survivors were found to have significantly lower levels of quality of life<sup>251</sup> and reported greater levels of cancer-specific distress.<sup>252</sup> While ethnic differences in quality of life may be attributed to socioeconomic (i.e., lower income), medical (i.e., co-morbid conditions), and environmental factors (i.e., greater perceptions of life stress), these factors were higher among African American breast cancer survivors compared to Caucasian breast cancer survivors.<sup>251</sup> However, socio-economic status factors were not associated with quality of life outcomes among short- or long-term African American breast cancer survivors.<sup>249</sup>

Cultural beliefs and values may play an important role in coping with breast cancer diagnosis and treatment, and ultimately quality of life. Studies have shown that religion and spirituality are important coping resources following breast cancer diagnosis in African American, Hispanic/Latina and Caucasian women;<sup>253</sup> however, the importance of these needs may differ depending on the woman's racial or ethnic background. For example, while 25 percent of Caucasian cancer patients reported five or more spiritual needs following their cancer diagnosis, significantly more African American (41 percent) and Hispanic/Latina (61percent) women reported five or more spiritual needs.<sup>131</sup> Other studies have shown that African American and Caucasian women use similar sources for social support following their cancer diagnosis, but significantly more African American than Caucasian women reported that they used God as a source of support.<sup>114</sup> In another study, Caucasian women affected with breast cancer used fewer religious coping strategies compared to African American women and use of religious coping strategies were

consistent following surgery only in African American and Hispanic/Latina women.<sup>113</sup> In a recent study on ethnic differences in cultural values between African American and white men newly diagnosed with prostate cancer, Halbert and colleagues found that levels of religiosity were significantly greater in African American men after controlling for clinical factors and sociodemographic characteristics.<sup>254</sup>

In the American Indian/Alaska Native population, the overall poor quality of life for cancer patients demands greater resources. A recent study by Burhansstipanov et al.<sup>172</sup> provides a listing of the quality of life issues that are communicated by the members of the native community. From caregiver support to pain management, quality of life needs to be addressed in this population. Most tribal cultures would like to integrate traditional/spiritual healing with western medicine in an effort to expedite recovery by removing anger and bitterness that accompanies a breast cancer diagnosis. A common complaint among the American Indian/Alaska Native populations is the inappropriateness and inaccuracy of pain assessment tools and lack of communication or miscommunication with health care providers. In most cases, chronically ill individuals are unable to obtain pain medications and are often reported to "pass from this life with no relief," with testimonies of family members having to restrain ill patients who were thrashing in pain. These quality of life issues are direct reflections of cultural distinctions that can be overcome with training, combined effort, and better communication. A very recent effort within the Indian Health Service has been made to develop guidelines that are culturally appropriate for

improving end-of-life care and symptom management. A train-the-trainer program involving all 12 regions of Indian Health Service has been initiated in response to very vocal community requests for improvement in this arena. This need to have providers well trained to address end-of-life care in the context of cultural parameters is also seen in other minority populations.

To date, only one study has been published in the biomedical literature examining the role of culture and other socio-ecological factors on quality of life among Latinas<sup>44</sup> and the studies among Asian American breast cancer survivors were qualitative in design, using focus group participants to capture cultural beliefs and attitudes about coping with breast cancer. Studies have shown that Asian American breast cancer patients, particularly those who are less acculturated, do not communicate their distress from breast cancer with others, be it with family members or providers. Kagawa Singer and colleagues reported that “face” and self-sacrifice are fundamental concepts in many Asian cultures. As a result, many women may tend to hide negative emotions and “suffer in silence” in order to maintain harmony in their family and social circles.<sup>232</sup> Additionally, they also found that Asian American breast cancer patients are less likely to seek professional assistance than their non-Hispanic white counterparts. Of course, given the diverse cultures in this heterogeneous population, there are differences between the many subgroups. Filipina patients may be an exception, in that one study found Filipinas tend to report worse outcomes than other Asian American subgroups.<sup>255</sup> Whether their tendency to communicate distress about the

disease arises from differences in cultural expression or from their own physical experiences with the disease is unknown.

Asian American breast cancer patients are likely to report family as the main source of support.<sup>44, 131</sup> However, family is also reported as a source of strain for some Asian American women, who expressed concerns about disclosing their illness and burdening family members. Breast cancer can also bring about physical changes that hinder the woman’s role as the family caretaker. Some women expressed concerns about their post-treatment functionality and whether they could still care for their families. The choice of mastectomy, as indicated in the Treatment subsection of this chapter above, may have negative repercussions on self-image.

While the tendencies to hide negative emotions and not seek psychosocial services are coping mechanisms congruent with many Asian cultures, they raise concerns about the emotional well-being of Asian American cancer patients. A research group in Hong Kong has been studying the post-treatment quality of life and treatment decision-making processes among Chinese women, using both qualitative and quantitative methods. In one study measuring social impacts of breast cancer for Chinese patients using a social adjustment scale, the resulting scores indicate declines after diagnosis in self-image, enjoyment of social activities, attractiveness, and sexuality.<sup>256</sup>

For Asian American women, and perhaps for women from other groups of color, beliefs about the causes of breast cancer and its management are highly driven by cultural values, including self-sacrifice and self-sufficiency. The choice of

treatments may be driven by the woman's familial role and hesitation to burden others with her illness, such as is the case with American Indian/Alaska Native women. Lack of knowledge regarding navigation of the U.S. health care system and financial accessibility may pose significant barriers to those less familiar or assertive with the process of accessing services. Less acculturated Asian American breast cancer survivors, unfortunately, often lack information about their diagnosis, treatment, and recovery support, as well as the skills to advocate for such information. Of particular concern are more recent immigrants, who typically are monolingual, yet must navigate through the confusing U.S. health care system. Language barriers and a lack of understanding about the American medical paradigm put them at greater risk for further compromised health.<sup>131</sup> While there is constantly a need for more research studies to confirm these ideas about the impact of acculturation and cultural beliefs on quality of life for Asian American breast cancer survivors, resources should also be dedicated to culturally-competent direct services that may aid these survivors during their journey to recovery (e.g. interpreters during treatment sessions, mental health/social workers, transportation services, and cancer navigator peer support).<sup>44, 116, 253, 257</sup>

### **Limitations/Gaps/Future Directions**

Limited breast cancer studies of African American, Hispanic/Latina, American Indian/Alaska Native, Asian American, and Native Hawaiian and other Pacific Islander women as they move through the breast cancer care continuum suggest that all are at risk for poorer

outcomes. The breast cancer risk for newer immigrant groups also increases with increasing levels of acculturation.

Research in diverse populations on breast cancer incidence, morbidity, and mortality is hampered by several factors. Three factors are amenable to more short term intervention. First is the constraint of accuracy on collection of data on subpopulations within the larger ethnic categories. Even in California, the error rate in ethnic classification is quite high for some groups, for example, American Indians. For other groups, such as Native Hawaiian and other Pacific Islanders, the categories are either too limited or non-existent. Second, too few researchers of color are interested in this topic or are even trained at this level to conduct such studies. A corollary to this second factor is the lack of clarity and precision in the definitions and use of the terms race, culture, ethnicity, and acculturation.<sup>258</sup> These concepts must be scientifically applied to produce results that are trustworthy and comparable. Third, the structure of the scientific endeavor on positivist designs and outreach strategies perhaps limits our ability to see different cultural realities.

The constructs of culture and acculturation, like race/ethnicity, encompass a multitude of factors. For the purposes of understanding risk factors and strategies for reducing breast cancer risk and adverse outcomes, research needs to focus on these specific factors and mechanisms for their impact on breast cancer. For example, what is it about lower acculturation levels that are associated with possibly worse breast cancer survival? Is it due to lack of access to quality care, language

barriers, cultural beliefs about disease process, a foreign paradigm of health and well-being, or something else? Future research should also explore the impact of legal status (e.g. naturalized citizen, legal resident, undocumented immigrant, refugee) on acculturation and health. The complex immigration history and anti-immigrant sentiments in the U.S., often directed at specific groups, may inhibit the acculturation process.<sup>259</sup> Despite the increasing evidence that acculturation is not a strict dichotomy in which the minority groups' cultures are displaced by the majority/dominant groups' cultures, theories still present a perspective of a unidirectional culture conflict. This enduring view can likely be attributed to the fact that the status of health and economy among all ethnic and racial minority groups cannot be understood without incorporating the effects of oppression, state-sponsored discrimination, and continuing marginalization. However, despite the decimating effects of coerced westernization, each of these groups has retained a significant condition of distinctive cultures. Measures should be developed to appropriately assess, address, and incorporate these cultures into cancer research. Future studies should also measure the impact of public policy decisions on health behavior and on breast cancer outcomes.

Mixed methodology and research paradigms are needed to move the field of research forward in assessing the contribution of culture to breast cancer outcomes. Rigorous inductive qualitative research is a critical step for uncovering the salient cultural factors impacting breast cancer diagnosis,

treatment, and outcomes. However, methodologically rigorous deductive quantitative studies are needed as well for assessing the relative impacts of cultural factors on health among diverse African American, American Indian/Alaska Native, Asian American, Pacific Islander and Hispanic/Latino subgroups. The non-Hispanic white category should be disaggregated into its major groups as well. Middle Easterners are not the same as northern Europeans, nor are eastern Europeans or groups from the Mediterranean. Such categories, originally designated in 1977 and revised in 1997 by the Office of Management and Budget, must seriously be re-evaluated for their application to scientific endeavors.

Cancer registry and other population-based data sources used to assess patterns of cancer incidence and mortality should aim to include more complete information on birthplace. Emphasis should be placed on developing methods to obtain additional information, such as imputing years in the U.S. through other information and acculturation characteristics of the neighborhood through census track data. It is important that data on acculturation be validated to ensure quality, completeness, and scientific validity.<sup>31</sup> Immigration history, for example, should have complete data on nativity, reason for emigration, age at entry, and years of U.S. residency. Missing information is most often not random, resulting in selection bias or misclassification bias which may compromise the validity of research findings.

Population-based behavioral risk factor surveys, such as the National Health Interview Survey, Behavioral Risk Factor Surveillance System, and

California Health Interview Survey, are excellent resources for continuing to monitor trends in breast cancer risk factors among diverse population groups of women. Emphasis, however, should be placed on including more questions addressing the concept of acculturation, and on disaggregating the larger ethnic subgroups in analyses.

An overriding theme that must emerge in health disparities is to combine disciplines in an effort to neutralize the burdens on minority populations who suffer from poorer health. When addressing this issue from the perspective of culture, there must first be a thorough understanding and acceptance of cultural differences. Perhaps the first step is to include some level of training for scientists, researchers, and caregivers, so they are “culturally competent.” Secondly, the research

should not strictly be performed on culturally distinct populations, but in cooperation and partnership with them. Several community-based participatory research studies that relied on multidirectional communication and circular feedback between researchers and the communities studied have been extremely effective in changing the landscape of cancer perception, and in transforming (without acculturating) subgroups to play a more active role in prevention and seeking treatments. Many cultures do not distinguish spiritual, religious, and traditional customs from medicine. Engaging these communities through partnerships with leaders within their populations, retaining cultural distinctions, and applying culturally-appropriate perspectives to screening, navigation, and treatments will greatly benefit the cause of neutralizing breast cancer disparities.

## **References**

1. Kagawa-Singer M. Population science is science only if you know the population. *J Cancer Educ.* 2006, 21(1 Suppl):S22-31.
2. D'Andrade RG. *The Development of Cognitive Anthropology.* Cambridge, England: Cambridge University Press, 1995.
3. Holland DC, Quinn N. *Cultural Models in Language and Thought.* Cambridge, England: Cambridge University Press, 1987.
4. American Cancer Society (ACS). *Cancer Facts & Figures, 2007.* Atlanta, GA, USA: American Cancer Society (ACS), 2007. Available at <http://www.cancer.org/downloads/STT/CAFF2007PWSecured.pdf>.
5. Le GM, Gomez SL, Clarke CA, Glaser SL, West DW. Cancer incidence patterns among Vietnamese in the United States and Ha Noi, Vietnam. *Int J Cancer.* 2002, 102(4):412-7.

## *California Breast Cancer Research Program*

6. Shimizu H, Ross RK, Bernstein L, Yatani R, Henderson BE, Mack TM. Cancers of the prostate and breast among Japanese and white immigrants in Los Angeles County. *Br J Cancer*. 1991, 63(6):963-6.
7. Ziegler RG, Hoover RN, Pike MC, Hildesheim A, Nomura AM, West DW, Wu-Williams AH, Kolonel LN, Horn-Ross PL, Rosenthal JF, Hyer MB. Migration patterns and breast cancer risk in Asian-American women. *J Natl Cancer Inst*. 1993, 85(22):1819-27.
8. Echeverria SE, Carrasquillo O. The roles of citizenship status, acculturation, and health insurance in breast and cervical cancer screening among immigrant women. *Med Care*. 2006, 44(8):788-92.
9. John EM, Phipps AI, Davis A, Koo J. Migration history, acculturation, and breast cancer risk in Hispanic women. *Cancer Epidemiol Biomarkers Prev*. 2005, 14(12):2905-13.
10. Kagawa-Singer M. A Socio-cultural Perspective on Cancer Control Issues for Asian Americans. *Asian Am Pac Isl J Health*. 2000, 8(1):12-7.
11. Phinney JS. When we talk about American ethnic groups, what do we mean? *Am Psychol*. 1996, 51:918-27.
12. Yinger JM. *Ethnicity Source of Strength? Source of Conflict?* Albany, NY, USA: State University of New York Press, 1994.
13. Kagawa-Singer M. From genes to social science: impact of the simplistic interpretation of race, ethnicity, and culture on cancer outcome. *Cancer*. 2001, 91(1 Suppl):226-32.
14. Kagawa-Singer M, Kassim-Lakha S. A strategy to reduce cross-cultural miscommunication and increase the likelihood of improving health outcomes. *Acad Med*. 2003, 78(6):577-87.
15. Hughes CK, Higuchi P. Ka Lokahi Wahine: a culturally based training for health professionals. *Pacific Health Dialog*. 2004, 11(2):166-9.
16. Lukwago SN, Kreuter MW, Holt CL, Steger-May K, Bucholtz DC, Skinner CS. Sociocultural correlates of breast cancer knowledge and screening in urban African American women. *Am J Public Health*. 2003, 93(8):1271-4.
17. Shinagawa SM. Swept under the "oriental" rug: How Asian American stereotypes and cultural differences lead to inferior care [article]. In: *Newsletter*. 74. San Francisco, CA, USA: Breast Cancer Action, 2002 Dec. Available at <http://www.bcaction.org/Pages/SearchablePages/2002Newsletters/Newsletter074G.html>.

## *Identifying Gaps in Breast Cancer Research*

18. Chun KM, Balls-Organista P, Marin G, editors. *Acculturation: Advances in Theory, Measurement, and Applied Research*. Washington, DC, USA: American Psychological Association (APA), 2003. (ISBN: 9781557989208)
19. Halbert CH, Armstrong K, Gandy OH Jr, Shaker L. Racial differences in trust in health care providers. *Arch Intern Med*. 2006, 166(8):896-901.
20. Boulware LE, Cooper LA, Ratner LE, LaVeist TA, Powe NR. Race and trust in the health care system. *Public Health Rep*. 2003, 118(4):358-65.
21. Executive Office of the President, Office of Management and Budget (OMB), Office of Information and Regulatory Affairs. *Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity*. Washington, DC, USA: Executive Office of the President, Office of Management and Budget (OMB), 1997. Available at <http://www.whitehouse.gov/omb/fedreg/1997standards.html>.
22. Strauss C. Models and motivation. In: D'Andrade RG, Strauss C. *Human Motives and Cultural Models*. Cambridge, England: Cambridge University Press, 1992. (ISBN: 9780521412339)
23. Nelson NJ. Migrant studies aid the search for factors linked to breast cancer risk. *J Natl Cancer Inst*. 2006, 98(7):436-8.
24. Newman LA, Griffith KA, Jatoi I, Simon MS, Crowe JP, Colditz GA. Meta-analysis of survival in African American and white American patients with breast cancer: ethnicity compared with socioeconomic status. *J Clin Oncol*. 2006, 24(9):1342-9.
25. Nguyen TU, Tanjasiri SP, Kagawa-Singer M, Tran JH, Foo MA. *Community Health Navigators for Breast- and Cervical-Cancer Screening Among Cambodian and Laotian Women: Intervention Strategies and Relationship-Building Processes*. Health Promot Pract. 2006.
26. O'Malley AS, Kerner J, Johnson AE, Mandelblatt J. Acculturation and breast cancer screening among Hispanic women in New York City. *Am J Public Health*. 1999, 89(2):219-27.
27. Phillips JM, Cohen MZ, Tarzian AJ. African American women's experiences with breast cancer screening. *J Nurs Scholarsh*. 2001, 33(2):135-40.
28. Phipps E, Cohen MH, Sorn R, Braitman LE. A pilot study of cancer knowledge and screening behaviors of Vietnamese and Cambodian women. *Health Care Women Int*. 1999, 20(2):195-207.

*California Breast Cancer Research Program*

29. Pike MC, Kolonel LN, Henderson BE, Wilkens LR, Hankin JH, Feigelson HS, Wan PC, Stram DO, Nomura AM. Breast cancer in a multiethnic cohort in Hawaii and Los Angeles: risk factor-adjusted incidence in Japanese equals and in Hawaiians exceeds that in whites. *Cancer Epidemiol Biomarkers Prev.* 2002, 11(9):795-800.
30. Pineda MD, White E, Kristal AR, Taylor V. Asian breast cancer survival in the US: a comparison between Asian immigrants, US-born Asian Americans and Caucasians. *Int J Epidemiol.* 2001, 30(5):976-82.
31. Hunt LM, Schneider S, Comer B. Should "acculturation" be a variable in health research? A critical review of research on US Hispanics. *Soc Sci Med.* 2004, 59(5):973-86.
32. Lukwago SN, Kreuter MW, Bucholtz DC, Holt CL, Clark EM. Development and validation of brief scales to measure collectivism, religiosity, racial pride, and time orientation in urban African American women. *Fam Community Health.* 2001, 24(3):63-71.
33. Russell KM, Champion VL, Perkins SM. Development of cultural belief scales for mammography screening. *Oncol Nurs Forum.* 2003, 30(4):633-40.
34. Hughes C, Fasaye GA, LaSalle VH, Finch C. Sociocultural influences on participation in genetic risk assessment and testing among African American women. *Patient Educ Couns.* 2003, 51(2):107-14.
35. Wong-Kim E, Sun A, DeMattos MC. Assessing cancer beliefs in a Chinese immigrant community. *Cancer Control.* 2003, 10(5 Suppl):22-8.
36. Jemal A, Clegg LX, Ward E, Ries LA, Wu X, Jamison PM, Wingo PA, Howe HL, Anderson RN, Edwards BK. Annual report to the nation on the status of cancer, 1975-2001, with a special feature regarding survival. *Cancer.* 2004, 101(1): 3-27.
37. United States Centers for Disease Control and Prevention (CDC), National Institutes of Health (NIH). Cancer. In: United States Department of Health and Human Services (DHSS). *Healthy People 2010: Understanding and Improving Health.* 2nd ed. ed. Washington, DC, USA: United States Government Printing Office, 2000; pp. 3-4. (ISBN: 017001001005509)
38. Maskarinec G, Zhang Y, Takata Y, Pagano I, Shumay DM, Goodman MT, Le Marchand L, Nomura AM, Wilkens LR, Kolonel LN. Trends of breast cancer incidence and risk factor prevalence over 25 years. *Breast Cancer Res Treat.* 2006, 98(1):45-55.
39. Maskarinec G, Pagano I, Lurie G, Wilkens LR, Kolonel LN. Mammographic density and breast cancer risk: the multiethnic cohort study. *Am J Epidemiol.* 2005, 162(8):743-52.

## *Identifying Gaps in Breast Cancer Research*

40. Howe HL, Wu X, Ries LA, Cokkinides V, Ahmed F, Jemal A, Miller B, Williams M, Ward E, Wingo PA, Ramirez A, Edwards BK. Annual report to the nation on the status of cancer, 1975-2003, featuring cancer among U.S. Hispanic/Latino populations. *Cancer*. 2006, 107(8):1711-42.
41. Edwards BK, Brown ML, Wingo PA, Howe HL, Ward E, Ries LA, Schrag D, Jamison PM, Jemal A, Wu XC, Friedman C, Harlan L, Warren J, Anderson RN, Pickle LW. Annual report to the nation on the status of cancer, 1975-2002, featuring population-based trends in cancer treatment. *J Natl Cancer Inst*. 2005, 97(19): 1407-27.
42. American Cancer Society. *Cancer Facts & Figures for African Americans 2005-2006*. Atlanta, GA, USA: American Cancer Society, Inc., 2005. Report ID: Pub. No. 8614.05. Available at <http://www.cancer.org/downloads/STT/CAFF2005AACorrPWSecured.pdf>.
43. Kagawa-Singer M, Park Tanjasiri S, Lee SW, Foo MA, Ngoc Nguyen TU, Tran JH, Valdez A. Breast and cervical cancer control among Pacific Islander and Southeast Asian Women: participatory action research strategies for baseline data collection in California. *J Cancer Educ*. 2006, 21(1 Suppl):S53-60.
44. Ashing-Giwa KT, Padilla G, Tejero J, Kraemer J, Wright K, Coscarelli A, Clayton S, Williams I, Hills D. Understanding the breast cancer experience of women: a qualitative study of African American, Asian American, Latina and Caucasian cancer survivors. *Psychooncology*. 2004, 13(6):408-28.
45. Krieger N, Quesenberry C Jr, Peng T, Horn-Ross P, Stewart S, Brown S, Swallen K, Guillermo T, Suh D, Alvarez-Martinez L, Ward F. Social class, race/ethnicity, and incidence of breast, cervix, colon, lung, and prostate cancer among Asian, Black, Hispanic, and White residents of the San Francisco Bay Area, 1988-92 (United States). *Cancer Causes Control*. 1999, 10(6):525-37.
46. Barroso J, McMillan S, Casey L, Gibson W, Kaminski G, Meyer J. Comparison between African-American and white women in their beliefs about breast cancer and their health locus of control. *Cancer Nurs*. 2000, 23(4):268-76.
47. Smiley MR, McMillan SC, Johnson S, Ojeda M. Comparison of Florida Hispanic and non-Hispanic Caucasian women in their health beliefs related to breast cancer and health locus of control. *Oncol Nurs Forum*. 2000, 27(6):975-84.
48. Kittles R, Royal C. The Genetics of African Americans: implications for disease gene mapping and identity. In: Goodman A, Heath D, Lindee SM. *Genetic Nature/Culture: Anthropology and Science beyond the Two-Culture Divide*. Berkeley and Los Angeles, CA, USA: University of California Press, 2003. (ISBN: 9780520237933)

*California Breast Cancer Research Program*

49. Cook ND. *Born to Die: Disease and New World Conquest, 1492-1650*. Cambridge, England: Cambridge University Press, 1998. (ISBN: 0521622085)
50. Hanson VD. *Carnage and Culture: Landmark Battles in the Rise of Western Power*. New York, NY, USA: Doubleday, 2001. (ISBN: 0382500521)
51. Henige D. *Numbers from Nowhere: The American Indian Contact Population Debate*. Norman, OK, USA: University of Oklahoma Press, 1998.
52. Jennings F. *The Founders of America: How Indians discovered the land, pioneered in it, and created great classical civilizations, how they were plunged into a Dark Age by invasion and conquest, and how they are reviving*. New York, NY, USA: Norton, 1993. (ISBN: 0393033732)
53. Mann CC. *1491: New Revelations of the Americas Before Columbus*. New York, NY, USA: Knopf, 2005. (ISBN: 9781400040063)
54. Royal R. *1492 and All That: Political Manipulations of History*. Washington, DC, USA: Ethics and Public Policy Center, 1992. (ISBN: 9780896331747)
55. Stannard DE. *American Holocaust: The Conquest of the New World*. New York, NY, USA: Oxford University Press, 1992. (ISBN: 9780195075816)
56. Stearn EW, Stearn AE. *The Effect of Smallpox on the Destiny of the Amerindian*. Boston, MA, USA: B. Humphries, Inc., 1945. (ISBN: 1290795)
57. Russell T. *American Indian Holocaust and Survival: A Population History since 1492*. Norman, OK, USA: University of Oklahoma Press, 1987. (ISBN: 9780806120744)
58. Bauer KR, Brown M, Cress RD, Parise CA, Caggiano V. Descriptive analysis of estrogen receptor (ER)-negative, progesterone receptor (PR)-negative, and HER2-negative invasive breast cancer, the so-called triple-negative phenotype: a population-based study from the California cancer Registry. *Cancer*. 2007, 109(9):1721-8.
59. Cleator S, Heller W, Coombes RC. Triple-negative breast cancer: therapeutic options. *Lancet Oncol*. 2007, 8(3):235-44.
60. Harris LN, Broadwater G, Lin NU, Miron A, Schnitt SJ, Cowan D, Lara J, Bleiweiss I, Berry D, Ellis M, Hayes DF, Winer EP, Dressler L. Molecular subtypes of breast cancer in relation to paclitaxel response and outcomes in women with metastatic disease: results from CALGB 9342. *Breast Cancer Res*. 2006, 8(6):R66.

## *Identifying Gaps in Breast Cancer Research*

61. Burhansstipanov L, Bemis L, Kaur JS, Bemis G. Sample genetic policy language for research conducted with native communities. *J Cancer Educ.* 2005, 20(1 Suppl):52-7.
62. Espey D. Correspondence regarding the United States Department of Health and Human Services (DHHS), Indian Health Services (IHS) Division of Epidemiology and Disease Prevention, preliminary data analysis for American Indian/Alaska Native (AI/AN) Report to the Nation monograph. 2007.
63. Hampton JW, Keala J, Luce P. Overview of National Cancer Institute networks for cancer control research in Native American populations. *Cancer.* 1996, 78(7 Suppl):1545-52.
64. Hampton JW. Cancer prevention and control in American Indians and Alaskan Natives. *American Indian Culture and Research Journal.* 1992, 16(3):41-9.
65. Burhansstipanov L, Villa-Dresser CM. Documentation of the Cancer Research Needs of American Indians and Alaskan Natives, Native American Monograph, No. 1. Bethesda, MD. USA: National Cancer Institute, Division of Cancer Prevention and Control, Cancer Control Science Program, 1994. Report ID: Pub. No. 94-3603.
66. Kaur JS. Native women and cancer. *Health Care Women Int.* 1999, 20(5):445-53.
67. Frost F, Shy KK. Racial differences between linked birth and infant death records in Washington State. *Am J Public Health.* 1980, 70(9):974-6.
68. Frost F, Taylor V, Fries E. Racial misclassification of Native Americans in a surveillance, epidemiology, and end results cancer registry. *J Natl Cancer Inst.* 1992, 84(12):957-62.
69. Hahn RA, Truman BI, Barker ND. Identifying ancestry: The reliability of ancestral identification in the United States by self, proxy, interviewer, and funeral director. *Epidemiology.* 1996, 7(1):75-80.
70. Hahn RA, Mulinare J, Teutsch SM. Inconsistencies in coding of race and ethnicity between birth and death in US infants. A new look at infant mortality, 1983 through 1985. *JAMA.* 1992, 267(2):259-63.
71. Hahn RA. The state of federal health statistics on racial and ethnic groups. *JAMA.* 1992, 267(2):268-71.
72. Hahn RA. Differential classification of American Indian race on birth and death certificates, U.S. Reservation States, 1983-1985. *The Indian Health Services (IHS) Primary Care Provider.* 1993, 18:10.

*California Breast Cancer Research Program*

73. Sugarman JR, Soderberg R, Gordon JE, Rivara FP. Racial misclassification of American Indians: its effect on injury rates in Oregon, 1989 through 1990. *Am J Public Health*. 1993, 83(5):681-4.
74. Sugarman JR, Hill G, Forquera R, Frost FJ. Coding of race on death certificates of patients of an Urban Indian Health Clinic, Washington, 1973-1988. *The Indian Health Services (IHS) Primary Care Provider*. 1992, 17:113-5.
75. Burhansstipanov L, Hampton JW, Wiggins C. Issues in cancer data and surveillance for American Indian and Alaskan Native populations. *J Registry Mgmt*. 1999, 29(4):153-7.
76. Burhansstipanov L. Urban Native American health issues. *Cancer*. 2000, 88(5 Suppl):1207-13.
77. Burhansstipanov L, Satter DE. Office of Management and Budget racial categories and implications for American Indians and Alaska Natives. *Am J Public Health*. 2000, 90(11):1720-3.
78. Mack TM, Walker A, Mack W, Bernstein L. Cancer in Hispanics in Los Angeles County. *National Cancer Institute Monograph*. 1985, 69:99-104.
79. Eschbach K, Mahnken JD, Goodwin JS. Neighborhood composition and incidence of cancer among Hispanics in the United States. *Cancer*. 2005, 103(5): 1036-44.
80. Abraido-Lanza AF, Chao MT, Gammon MD . Breast and cervical cancer screening among Latinas and non-Latina whites. *Am J Public Health*. 2004, 94(8):1393-8.
81. Menck HR. Cancer incidence in the Mexican American. *National Cancer Institute Monograph*. 1977, 47:103-6.
82. Wu AH, Ziegler RG, Pike MC, Nomura AM, West DW, Kolonel LN , Horn-Ross PL, Rosenthal JF, Hoover RN. Menstrual and reproductive factors and risk of breast cancer in Asian-Americans. *Br J Cancer*. 1996, 73(5):680-6.
83. Wu AH, Ziegler RG, Horn-Ross PL, Nomura AM, West DW, Kolonel LN, Rosenthal JF, Hoover RN, Pike MC. Tofu and risk of breast cancer in Asian-Americans. *Cancer Epidemiol Biomarkers Prev*. 1996, 5(11):901-6.
84. Wu AH, Ziegler RG, Nomura AM, West DW, Kolonel LN, Horn-Ross PL, Hoover RN, Pike MC. Soy intake and risk of breast cancer in Asians and Asian Americans. *Am J Clin Nutr*. 1998, 68(6 Suppl):1437S-43S.
85. Tseng M, Byrne C, Evers KA, London WT, Daly MB. Acculturation and breast density in foreign-born, U.S. Chinese women. *Cancer Epidemiol Biomarkers Prev*. 2006, 15(7):1301-5.

## *Identifying Gaps in Breast Cancer Research*

86. Deapen D, Liu L, Perkins C, Bernstein L, Ross RK. Rapidly rising breast cancer incidence rates among Asian-American women. *Int J Cancer*. 2002, 99(5):747-50.
87. Espey DK, Paisano RE, Cobb N. Cancer Mortality among American Indians and Alaskan natives: Regional Differences, 1994-1998. Rockville, MD, USA: United States Department of Health and Human Services (DHHS), Indian Health Services (IHS), 2003 . Report ID: IHS Pub No. 97-615-28.
88. United States Department of Health and Human Services (DHHS), Indian Health Service (IHS). Trends in Indian Health: 2000-2001. Rockville, MD, USA: United States Department of Health and Human Services (DHHS), Indian Health Service (IHS), 2001. Available at [http://www.ihs.gov/NonMedicalPrograms/IHS\\_Stats/files/Trends00-01\\_Front.pdf](http://www.ihs.gov/NonMedicalPrograms/IHS_Stats/files/Trends00-01_Front.pdf).
89. Burhansstipanov L. [Editorial] Cancer mortality among Native Americans. *Cancer* . 1998, 83(11):2247-50.
90. Cobb N, Paisano RE. Patterns of cancer mortality among Native Americans. *Cancer*. 1998, 83(11):2377-83.
91. Cobb N, Paisano RE. Cancer Mortality among American Indians and Alaskan Natives in the United States: Regional Differences in Indian Health, 1989-1993. Rockville, MD, USA: United States Department of Health and Human Services (DHHS), Indian Health Services (IHS), 1997. Report ID: IHS Pub. No. 97-615-23.
92. Sadler GR, Ryuji L, Nguyen T, Oh G, Paik G, Kustin B. Heterogeneity within the Asian American community. *Int J Equity Health*. 2003, 2(1):12.
93. Sadler GR, Ryuji LT, Ko CM, Nguyen E. Korean women: breast cancer knowledge, attitudes and behaviors. *BMC Public Health*. 2001, 1:7.
94. Sadler GR, Thomas AG, Yen JY, Dhanjal SK, Marie Ko C, Tran CH, Wang K. Breast cancer education program based in Asian grocery stores. *J Cancer Educ*. 2000, 15(3):173-7.
95. Chen WT, Bakken S. Breast cancer knowledge assessment in female Chinese immigrants in New York. *Cancer Nurs*. 2004, 27(5):407-12.
96. Guevarra JS, Kwate NO, Tang TS, Valdimarsdottir HB, Freeman HP, Bovbjerg DH. Acculturation and its relationship to smoking and breast self-examination frequency in African American women. *J Behav Med*. 2005, 28(2):191-9.

*California Breast Cancer Research Program*

97. Skaer TL, Robison LM, Sclar DA, Harding GH. Knowledge, attitudes, and patterns of cancer screening: a self-report among foreign born Hispanic women utilizing rural migrant health clinics. *J Rural Health*. 1996, 12(3):169-77.
98. Ahmad F, Stewart DE. Predictors of clinical breast examination among South Asian immigrant women. *J Immigr Health*. 2004, 6 (3):119-26.
99. Austin LT, Ahmad F, McNally MJ, Stewart DE. Breast and cervical cancer screening in Hispanic women: a literature review using the health belief model. *Womens Health Issues*. 2002, 12(3):122-8.
100. Borrayo EA, Guarnaccia CA. Differences in Mexican-born and U.S.-born women of Mexican descent regarding factors related to breast cancer screening behaviors . *Health Care Women Int*. 2000, 21(7):599-613.
101. Jacobs EA, Karavolos K, Rathouz PJ, Ferris TG, Powell LH. Limited English proficiency and breast and cervical cancer screening in a multiethnic population. *Am J Public Health*. 2005, 95( 8):1410-6.
102. Juon HS, Choi S, Klassen A, Roter D . Impact of breast cancer screening intervention on Korean-American women in Maryland. *Cancer Detect Prev*. 2006, 30(3):297-305.
103. Juon HS, Kim M, Shankar S, Han W. Predictors of adherence to screening mammography among Korean American women. *Prev Med*. 2004, 39(3):474-81.
104. Kandula NR, Wen M, Jacobs EA, Lauderdale DS. Low rates of colorectal, cervical, and breast cancer screening in Asian Americans compared with non-Hispanic whites: cultural influences or access to care? *Cancer*. 2006, 107(1): 184-92.
105. Ko CM, Sadler GR, Ryujin L, Dong A. Filipina American women's breast cancer knowledge, attitudes, and screening behaviors. *BMC Public Health*. 2003, 3:27.
106. Lee EE, Fogg LF, Sadler GR. Factors of breast cancer screening among Korean immigrants in the United States. *J Immigr Minor Health*. 2006, 8(3):223-33.
107. Rodriguez MA, Ward LM, Perez-Stable EJ. Breast and cervical cancer screening: impact of health insurance status, ethnicity, and nativity of Latinas. *Ann Fam Med*. 2005, 3(3):235-41.
108. Sadler GR, Dhanjal SK, Shah NB, Shah RB, Ko C, Anghel M, Harshburger R. Asian Indian women: knowledge, attitudes and behaviors toward breast cancer early detection. *Public Health Nurs*. 2001, 18(5):357-63.

## *Identifying Gaps in Breast Cancer Research*

109. Salder GR, Fullerton JT. Effective strategies that enhance adherence to breast cancer screening guidelines. *Breast Dis.* 2001, 13:3-12.
110. Suarez L, Pulley L. Comparing acculturation scales and their relationship to cancer screening among older Mexican-American women. *J Natl Cancer Inst Monogr.* 1995, (18):41-7.
111. Suarez L, Lloyd L, Weiss N, Rainbolt T, Pulley L. Effect of social networks on cancer-screening behavior of older Mexican-American women. *J Natl Cancer Inst.* 1994, 86(10):775-9.
112. Suarez L, Roche RA, Nichols D, Simpson DM. Knowledge, behavior, and fears concerning breast and cervical cancer among older low-income Mexican-American women. *Am J Prev Med.* 1997, 13(2):137-42.
113. Tang TS, Solomon LJ, Yeh CJ, Worden JK. The role of cultural variables in breast self-examination and cervical cancer screening behavior in young Asian women living in the United States. *J Behav Med.* 1999, 22(5):419-36.
114. Tang TS, Solomon LJ, McCracken LM. Cultural barriers to mammography, clinical breast exam, and breast self-exam among Chinese-American women 60 and older. *Prev Med.* 2000, 31(5):575-83.
115. Tu SP, Yasui Y, Kuniyuki A, Schwartz SM, Jackson JC, Taylor VM. Breast cancer screening: stages of adoption among Cambodian American women. *Cancer Detect Prev.* 2002, 26(1):33-41.
116. Wong-Kim E, Wang CC. Breast self-examination among Chinese immigrant women. *Health Educ Behav.* 2006, 33( 5):580-90.
117. Wu TY, Guthrie BJ, Bancroft JM. An integrative review on breast cancer screening practice and correlates among Chinese, Korean, Filipino, and Asian Indian American women. *Health Care Women Int.* 2005, 26(3):225-46.
118. Yu MY, Seetoo AD, Hong OS, Song L, Raizade R, Weller AL. Cancer screening promotion among medically underserved Asian American women: integration of research and practice. *Res Theory Nurs Pract.* 2002, 16(4):237-48.
119. Zambrana RE, Breen N, Fox SA, Gutierrez-Mohamed ML. Use of cancer screening practices by Hispanic women: analyses by subgroup. *Prev Med.* 1999, 29(6 Pt 1):466-77.
120. Wu TY, Bancroft J. Filipino American women's perceptions and experiences with breast cancer screening. *Oncol Nurs Forum.* 2006, 33(4):E71-8.

*California Breast Cancer Research Program*

121. Tanjasiri SP, Tran JH, Kagawa-Singer M, Foo MA, Foong HL, Lee SW, Nguyen TU, Rickles J, Wang JS. Exploring access to cancer control services for Asian-American and Pacific Islander communities in Southern California. *Ethn Dis.* 2004, 14(3 Suppl 1):S14-9.
122. Maxwell AE, Bastani R, Vida P, Warda US. Results of a randomized trial to increase breast and cervical cancer screening among Filipino American women. *Prev Med.* 2003, 37(2):102-9.
123. Fulton JP, Rakowski W, Jones AC. Determinants of breast cancer screening among inner-city Hispanic women in comparison with other inner-city women. *Public Health Rep.* 1995, 110(4):476-82.
124. Goel MS, Wee CC, McCarthy EP, Davis RB, Ngo-Metzger Q, Phillips RS. Racial and ethnic disparities in cancer screening: the importance of foreign birth as a barrier to care. *J Gen Intern Med.* 2003, 18(12):1028-35.
125. De Alba I, Hubbell FA, McMullin JM, Sweningson JM, Saitz R. Impact of U.S. citizenship status on cancer screening among immigrant women. *J Gen Intern Med.* 2005, 20(3):290-6.
126. Koval AE, Riganti AA, Foley KL. CAPRELA (Cancer Prevention for Latinas): findings of a pilot study in Winston-Salem, Forsyth County. *N C Med J.* 2006, 67(1):9-15.
127. Leong-Wu CA, Fernandez ME. Correlates of breast cancer screening among Asian Americans enrolled in ENCOREplus. *J Immigr Minor Health.* 2006, 8(3):235-43.
128. Wu TY, West B, Chen YW, Hergert C. Health beliefs and practices related to breast cancer screening in Filipino, Chinese and Asian-Indian women. *Cancer Detect Prev.* 2006, 30(1):58-66.
129. Yeo SS, Meiser B, Barlow-Stewart K, Goldstein D, Tucker K, Eisenbruch M. Understanding community beliefs of Chinese-Australians about cancer: initial insights using an ethnographic approach. *Psychooncology.* 2005, 14(3):174-86.
130. Bottorff JL, Johnson JL, Bhagat R, Grewal S, Balneaves LG, Clarke H, Hilton BA. Beliefs related to breast health practices: the perceptions of South Asian women living in Canada. *Soc Sci Med.* 1998, 47(12):2075-85.
131. Tam Ashing K, Padilla G, Tejero J, Kagawa-Singer M. Understanding the breast cancer experience of Asian American women. *Psychooncology.* 2003, 12(1):38-58.
132. Goldman RE, Risica PM. Perceptions of breast and cervical cancer risk and screening among Dominicans and Puerto Ricans in Rhode Island. *Ethn Dis.* 2004, 14(1):32-42.

## *Identifying Gaps in Breast Cancer Research*

133. Luquis RR, Villanueva Cruz IJ. Knowledge, attitudes, and perceptions about breast cancer and breast cancer screening among Hispanic women residing in South Central Pennsylvania. *J Community Health*. 2006, 31(1):25-42.
134. Spurlock WR, Cullins LS. Cancer fatalism and breast cancer screening in African American women. *ABNF J*. 2006, 17(1):38-43.
135. Powe BD, Hamilton J, Brooks P. Perceptions of cancer fatalism and cancer knowledge: a comparison of older and younger African American women. *J Psychosoc Oncol*. 2006, 24(4):1-13.
136. Magai C, Consedine N, Conway F, Neugut A, Culver C. Diversity matters: Unique populations of women and breast cancer screening. *Cancer*. 2004, 100(11):2300-7.
137. Lee M. Breast and Cervical Cancer: Early Detection in Chinese American Women. *Asian Am Pac Isl J Health*. 1998, 6(2):351-7.
138. Borryo EA, Jenkins SR. Feeling healthy: so why should Mexican-descent women screen for breast cancer? *Qual Health Res*. 2001, 11(6):812-23.
139. Remennick L. The challenge of early breast cancer detection among immigrant and minority women in multicultural societies. *Breast J*. 2006, 12 Suppl 1:S103-10.
140. Hoeman SP, Ku YL, Ohl DR. Health beliefs and early detection among Chinese women. *West J Nurs Res*. 1996, 18(5):518-33.
141. McPhee SJ, Stewart S, Brock KC, Bird JA, Jenkins CN, Pham GQ. Factors associated with breast and cervical cancer screening practices among Vietnamese American women. *Cancer Detect Prev*. 1997, 21(6):510-21.
142. McPhee SJ, Bird JA, Davis T, Ha NT, Jenkins CN, Le B. Barriers to breast and cervical cancer screening among Vietnamese-American women. *Am J Prev Med*. 1997, 13(3):205-13.
143. Ho V, Yamal JM, Atkinson EN, Basen-Engquist K, Tortolero-Luna G, Follen M. Predictors of breast and cervical screening in Vietnamese women in Harris County, Houston, Texas. *Cancer Nurs*. 2005, 28(2):119-29; quiz 130-1.
144. Donnelly TT. The health-care practices of Vietnamese-Canadian women: cultural influences on breast and cervical cancer screening. *Can J Nurs Res*. 2006, 38(1):82-101.
145. Parsa P, Kandiah M, Abdul Rahman H, Zulkefli NM. Barriers for breast cancer screening among Asian women: a mini literature review. *Asian Pac J Cancer Prev*. 2006, 7(4):509-14.

*California Breast Cancer Research Program*

146. Facione NC, Giancarlo C, Chan L. Perceived risk and help-seeking behavior for breast cancer. A Chinese-American perspective. *Cancer Nurs.* 2000, 23(4):258-67.
147. Rajaram SS, Rashidi A. Asian-Islamic women and breast cancer screening: a socio-cultural analysis. *Women Health.* 1999, 28(3):45-58.
148. Facione NC, Giancarlo CA. Narratives of breast symptom discovery and cancer diagnosis: psychologic risk for advanced cancer at diagnosis. *Cancer Nurs.* 1998, 21(6):430-40.
149. Mo B. Modesty, sexuality, and breast health in Chinese-American women. *West J Med.* 1992, 157(3):260-4.
150. Robins Sadler G, Takahashi M, Ko CM, Nguyen T. Japanese American women: behaviors and attitudes toward breast cancer education and screening. *Health Care Women Int.* 2003, 24(1):18-26.
151. United States Census Bureau, Racial Statistics Branch. *The American Community -- Asians: 2004, American Community Survey Reports.* Washington, DC, USA: United States Census Bureau, 2007. Report ID: ACS-05. Available at <http://www.census.gov/prod/2007pubs/acs-05.pdf>.
152. Smedley BD, Stith AY, Nelson AR, Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, Board on Health Sciences Policy, Institute of Medicine, editors. *Washington, DC, USA: National Academies Press, 2003. (ISBN: 030908265X)*
153. Van Ryn M, Burke J. The effect of patient race and socio-economic status on physician's perceptions of patients. In: LaVeist TA, editor. *Race, Ethnicity and Health: A Public Health Reader.* 1st ed. San Francisco, CA, USA: John Wiley & Sons, Inc., 2002; pp. 547-74.
154. Hughes DL. *Quality of Health Care for Asian Americans: Findings from the Commonwealth Fund 2001 Health Care Quality Survey.* New York, NY, USA: The Commonwealth Fund, 2002. Report ID: Pub. No. 525. Available at [http://www.commonwealthfund.org/usr\\_doc/Hughes\\_factsheetasam.pdf?section=4039](http://www.commonwealthfund.org/usr_doc/Hughes_factsheetasam.pdf?section=4039).
155. Zavertrnik JJ. Strategies for reaching poor blacks and hispanics in Dade County, Florida. *Cancer.* 1993, 72(3 Suppl):1088-92.
156. McAlister AL, Fernandez-Esquer ME, Ramirez AG, Trevino F, Gallion KJ, Villarreal R, Pulley LV, Hu S, Torres I, Zhang Q. Community level cancer control in a Texas barrio: Part II--Base-line and preliminary outcome findings. *J Natl Cancer Inst Monogr.* 1995, (18):123-6.

## *Identifying Gaps in Breast Cancer Research*

157. Fernandez ME, Gonzales A, Tortolero-Luna G, Partida S, Bartholomew LK. Using intervention mapping to develop a breast and cervical cancer screening program for Hispanic farmworkers: Cultivando La Salud. *Health Promot Pract.* 2005, 6(4):394-404.
158. McCoy CB, Pereyra M, Metsch LR, Collado-Mesa F, Messiah SE, Sears S. A community-based breast cancer screening program for medically underserved women: its effect on disease stage at diagnosis and on hazard of death. *Rev Panam Salud Publica.* 2004, 15(3):160-7.
159. Gotay CC, Wilson ME. Social support and cancer screening in African American, Hispanic, and Native American women. *Cancer Pract.* 1998, 6(1):31-7.
160. Hansen LK, Feigl P, Modiano MR, Lopez JA, Escobedo Sluder S, Moinpour CM, Pauler DK, Meyskens FL. An educational program to increase cervical and breast cancer screening in Hispanic women: a Southwest Oncology Group study. *Cancer Nurs.* 2005, 28(1):47-53.
161. Larkey L. Las mujeres saludables: reaching Latinas for breast, cervical and colorectal cancer prevention and screening. *J Community Health.* 2006, 31(1):69-77.
162. Borrayo EA. Where's Maria? A video to increase awareness about breast cancer and mammography screening among low-literacy Latinas. *Prev Med.* 2004, 39(1):99-110.
163. Darling CM, Nelson CP, Fife RS. Improving breast health education for Hispanic women. *J Am Med Womens Assoc.* 2004, 59(3):171, 228-9.
164. Jibaja ML, Kingery P, Neff NE, Smith Q, Bowman J, Holcomb JD. Tailored, interactive soap operas for breast cancer education of high-risk Hispanic women. *J Cancer Educ.* 2000, 15(4):237-42.
165. Mayo RM, Erwin DO, Spitler HD. Implications for breast and cervical cancer control for Latinas in the rural South: a review of the literature. *Cancer Control.* 2003, 10(5 Suppl):60-8.
166. Ahmad F, Cameron JI, Stewart DE. A tailored intervention to promote breast cancer screening among South Asian immigrant women. *Soc Sci Med.* 2005, 60(3):575-86.
167. Simon CE. Breast cancer screening: cultural beliefs and diverse populations. *Health Soc Work.* 2006, 31(1):36-43.
168. Ka'opua LS, Anngela L. Developing a spiritually based breast cancer screening intervention for native Hawaiian women. *Cancer Control.* 2005, 12 Suppl 2:97-9.

*California Breast Cancer Research Program*

169. Adams EK, Breen N, Joski PJ. Impact of the National Breast and Cervical Cancer Early Detection Program on mammography and Pap test utilization among white, Hispanic, and African American women: 1996-2000. *Cancer*. 2007, 109(2 Suppl):348-58.
170. Darnell JS, Chang CH, Calhoun EA. Knowledge about breast cancer and participation in a faith-based breast cancer program and other predictors of mammography screening among African American women and Latinas. *Health Promot Pract*. 2006, 7(3 Suppl):201S-12S.
171. Erwin DO, Ivory J, Stayton C, Willis M, Jandorf L, Thompson H, Womack S, Hurd TC. Replication and dissemination of a cancer education model for African American women. *Cancer Control*. 2003, 10(5 Suppl):13-21.
172. Burhansstipanov L. Community-driven Native American cancer survivors' quality of life research priorities. *J Cancer Educ*. 2005, 20(1 Suppl):7-11.
173. Burhansstipanov L, Krebs LU, Grass R, Wanliss EJ, Saslow D. A review of effective strategies for native women's breast health outreach and education. *J Cancer Educ*. 2005, 20(1 Suppl):71-9.
174. Burhansstipanov L, Lovato MP, Krebs LV. Native American cancer survivors. *Health Care Women Int*. 1999, 20(5):505-15.
175. Burhansstipanov L. Lessons Learned from Native American Cancer Prevention, Control and Supportive Care Projects. *Asian Am Pac Isl J Health*. 1998, 6(2):91-9.
176. Petersen WO, Trapp MA, Sellers TA, Nicometo AM, Kaur JS. Evaluation of a training program to prepare community health representatives to promote breast and cervix cancer screening among Native American women. *J Cancer Educ*. 2004, 19(4):237-43.
177. Black Feather J. Cultural beliefs and understanding cancer. *American Indian Culture and Research Journal*. 1992, 16(3):139-43.
178. Kaur JS, Dignan M, Burhansstipanov L, Baukol P, Claus C. The "Spirit of Eagles" legacy. *Cancer*. 2006, 107(8 Suppl):1987-94.
179. Michalek AM, Mahoney MC, Papas M, Tenney M, Burhansstipanov L. Tribal-based cancer control activities among Alaska Natives: services and perceptions. *Alaska Med*. 1996, 38(2):59-64, 83.
180. Nguyen T, Vo PH, McPhee SJ, Jenkins CN. Promoting early detection of breast cancer among Vietnamese-American women. Results of a controlled trial. *Cancer*. 2001, 91(1 Suppl):267-73.

## *Identifying Gaps in Breast Cancer Research*

181. Jenkins CN, McPhee SJ, Bird JA, Pham GQ, Nguyen BH, Nguyen T, Lai KQ, Wong C, Davis TB. Effect of a media-led education campaign on breast and cervical cancer screening among Vietnamese-American women. *Prev Med.* 1999, 28(4):395-406.
182. McPhee SJ. Promoting Breast and Cervical Cancer Screening Among Vietnamese American Women: Two Interventions. *Asian Am Pac Isl J Health.* 1998, 6(2):344-50.
183. Borrayo EA, Thomas JJ, Lawsin C. Cervical cancer screening among Latinas: the importance of referral and participation in parallel cancer screening behaviors. *Women Health.* 2004, 39(2):13-29.
184. Tanjasiri SP, Kagawa-Singer M, Nguyen TN, Foo MA. Collaborative research as an essential component for addressing cancer disparities among Southeast Asian and Pacific Islander women. *Health Promot Pract.* 2002, 3(2):144-54.
185. Tanjasiri SP, Kagawa-Singer M, Foo MA, Chao M, Linayao-Putman I, Nguyen J, Pirumyan G, Valdez A. Designing culturally and linguistically appropriate health interventions: the "Life Is Precious" Hmong breast cancer study. *Health Educ Behav.* 2007, 34(1):140-53.
186. Kreuter MW, Sugg-Skinner C, Holt CL, Clark EM, Haire-Joshu D, Fu Q, Booker AC, Steger-May K, Bucholtz D. Cultural tailoring for mammography and fruit and vegetable intake among low-income African-American women in urban public health centers. *Prev Med.* 2005, 41(1):53-62.
187. Becker SA, Affonso DD, Beard MB. Talking circles: Northern Plains tribes American Indian women's views of cancer as a health issue. *Public Health Nurs.* 2006, 23(1):27-36.
188. American Cancer Society (ACS). *Breast Cancer Facts & Figures 2003-2004.* Atlanta, GA, USA: American Cancer Society, Inc., 2003. Report ID: Publication No. 8610.03. Available at <http://www.cancer.org/downloads/STT/CAFF2003BrFPWSecured.pdf>.
189. Sellers TA, Trapp MA, Vierkant RA, Petersen W, Kottke TE, Jensen A, Kaur JS. Evaluation of a program to train nurses to screen for breast and cervical cancer among Native American women. *J Cancer Educ.* 2002, 17(1):24-7.
190. Reeves TJ, Bennett CE. *We the People, Asians in the United States.* Washington, DC, USA: United States Bureau of the Census, 2004. Report ID: CENSR-17. Available at <http://www.census.gov/prod/2004pubs/censr-17.pdf>.
191. Harris PM, Jones NA. *We the People, Pacific Islanders in the United States.* Washington, DC, USA: United States Bureau of the Census, 2005. Report ID: CENSR-26. Available at <http://www.census.gov/prod/2005pubs/censr-26.pdf>.

## *California Breast Cancer Research Program*

192. Asian Pacific American Legal Center (APALC), Asian Law Caucus (ALC), National Asian Pacific American Legal Consortium (NAPALC). *The Diverse Face of Asians and Pacific Islanders in California: Asian & Pacific Islander Demographic Profile*. Los Angeles, CA, USA: Asian Pacific American Legal Center of Southern California, 2006. Available at [http://www.apalc.org/CA\\_Report\\_feb\\_%202\\_05.pdf](http://www.apalc.org/CA_Report_feb_%202_05.pdf).
193. Asian Pacific American Legal Center (APALC), Asian & Pacific Islander American Health Forum (APIAHF). *California Speaks: Language Diversity and English Proficiency by Legislative District*. Los Angeles, CA, USA: Asian Pacific American Legal Center, 2005. Available at <http://www.apiahf.org/resources/pdf/CALIFORNIA%20SPEAKS.pdf>.
194. Li CI, Malone KE, Daling JR. Differences in breast cancer hormone receptor status and histology by race and ethnicity among women 50 years of age and older. *Cancer Epidemiol Biomarkers Prev*. 2002, 11(7):601-7.
195. Lin SS, Clarke CA, Prehn AW, Glaser SL, West DW, O'Malley CD. Survival differences among Asian subpopulations in the United States after prostate, colorectal, breast, and cervical carcinomas. *Cancer*. 2002, 94(4):1175-82.
196. Chen JY, Diamant AL, Kagawa-Singer M, Pourat N, Wold C. Disaggregating data on Asian and Pacific Islander women to assess cancer screening. *Am J Prev Med*. 2004, 27(2):139-45.
197. Simon CE, Crowther M, Higgerson HK. The stage-specific role of spirituality among African American Christian women throughout the breast cancer experience. *Cultur Divers Ethnic Minor Psychol*. 2007, 13(1):26-34.
198. Mytko JJ, Knight SJ. Body, mind and spirit: towards the integration of religiosity and spirituality in cancer quality of life research. *Psychooncology*. 1999, 8(5):439-50.
199. Halstead MT, Fernsler JI. Coping strategies of long-term cancer survivors. *Cancer Nurs*. 1994, 17(2):94-100.
200. Lannin DR, Mathews HF, Mitchell J, Swanson MS, Swanson FH, Edwards MS. Influence of socioeconomic and cultural factors on racial differences in late-stage presentation of breast cancer. *JAMA*. 1998, 279(22):1801-7.
201. Eide P. Native Hawaiian women and the experience of breast cancer. *Women Health*. 2006, 44(4):41-59.
202. Burhansstipanov L, Hollow W. Native American cultural aspects of oncology nursing care. *Semin Oncol Nurs*. 2001, 17(3):206-19.

## *Identifying Gaps in Breast Cancer Research*

203. Burhansstipanov L, Krebs LU, Bradley A, Gamito E, Osborn K, Dignan MB, Kaur JS. Lessons learned while developing "Clinical Trials Education for Native Americans" curriculum. *Cancer Control*. 2003, 10(5 Suppl):29-36.
204. Sellers C. Discovering environmental cancer: Wilhelm Hueper, post-World War II epidemiology, and the vanishing clinician's eye. *Am J Public Health*. 1997, 87(11):1824-35.
205. Reuben SH. Facing Cancer in Indian Country: The Yakama Nation and Pacific Northwest Tribes: President's Cancer Panel 2002 Annual Report. Washington, DC, USA: United States Department of Health and Human Services (DHHS), National Institutes of Health (NIH), National Cancer Institute (NCI), 2003. Available at <http://deainfo.nci.nih.gov/advisory/pcp/YakamaBook.pdf>.
206. Krebs LU. *Recreating Harmony: Stories of Native American Women Surviving Breast Cancer* [dissertation]. Denver, CO, USA: University of Colorado, 1997.
207. Petereit DG, Rogers D, Burhansstipanov L, Kaur J, Govern F, Howard SP, Osburn CH, Coleman CN, Fowler JF, Chappell R, Mehta MP. Walking forward: the South Dakota Native American project. *J Cancer Educ*. 2005, 20(1 Suppl):65-70.
208. Risendal B, Roe D, DeZapien J, Papenfuss M, Giuliano A. Influence of health care, cost, and culture on breast cancer screening: issues facing urban American Indian women. *Prev Med*. 1999, 29(6 Pt 1):501-9.
209. Saavedra EL. *Barriers to Breast Cancer Health Care: A Review of Literature and Recommendations for New Mexico*. Albuquerque, NM, USA: University of New Mexico, Health Sciences Center, Center for Population Health, 1997. Report ID: United States Centers for Disease Control and Prevention (CDC) Cooperative Agreement U57/CCU606722 .
210. Hedeem AN, White E, Taylor V. Ethnicity and birthplace in relation to tumor size and stage in Asian American women with breast cancer. *Am J Public Health*. 1999, 89(8):1248-52.
211. Lin SS, O'Malley CD, Clarke CA, Le GM. Birthplace and survival among Asian women diagnosed with breast cancer in cancer registry data: the impact of selection bias. *Int J Epidemiol*. 2002, 31(2):511-3; author reply 513.
212. Facione NC, Facione PA. The cognitive structuring of patient delay in breast cancer. *Soc Sci Med*. 2006, 63(12):3137-49.
213. Moy B, Park ER, Feibelman S, Chiang S, Weissman JS. Barriers to repeat mammography: cultural perspectives of African-American, Asian, and Hispanic women. *Psychooncology*. 2006, 15(7):623-34.

*California Breast Cancer Research Program*

214. Lantz PM, Mujahid M, Schwartz K, Janz NK, Fagerlin A, Salem B, Liu L, Deapen D, Katz SJ. The influence of race, ethnicity, and individual socioeconomic factors on breast cancer stage at diagnosis. *Am J Public Health*. 2006, 96(12):2173-8.
215. Bradley CJ, Given CW, Roberts C. Race, socioeconomic status, and breast cancer treatment and survival. *J Natl Cancer Inst*. 2002, 94(7):490-6.
216. Wojcik BE, Spinks MK, Stein CR. Effects of screening mammography on the comparative survival rates of African American, white, and Hispanic beneficiaries of a comprehensive health care system. *Breast J*. 2003, 9(3):175-83.
217. Li CI, Malone KE, Daling JR. Differences in breast cancer stage, treatment, and survival by race and ethnicity. *Arch Intern Med*. 2003, 163(1):49-56.
218. Ishida DN, Toomata-Mayer TF, Braginsky NS. Beliefs and attitudes of Samoan women toward early detection of breast cancer and mammography utilization. *Cancer*. 2001, 91(1 Suppl):262-6.
219. Kaplan CP, Crane LA, Stewart S, Juarez-Reyes M. Factors affecting follow-up among low-income women with breast abnormalities. *Womens Health (Larchmt)*. 2004, 13(2):195-206.
220. Tammemagi CM. Racial/ethnic disparities in breast and gynecologic cancer treatment and outcomes. *Curr Opin Obstet Gynecol*. 2007, 19(1):31-6.
221. Intercultural Cancer Council Caucus (ICC-Caucus). *From Awareness to Action: The Unequal Burden of Cancer*. Larkspur, CA, USA: Intercultural Cancer Council Caucus , 2004. Available at <http://icc-caucus.org/ICC-CaucusActionPlan.pdf>.
222. Physicians for Human Rights, Panel on Racial and Ethnic Disparities in Medical Care. *The Right to Equal Treatment: An Action Plan to End Racial and Ethnic Disparities in Clinical Diagnosis and Treatment in the United States*. Boston, MA, USA: Physicians for Human Rights, 2003. Available at <http://physiciansforhumanrights.org/library/documents/reports/report-rightequaltreat-2003.PDF>. (ISBN: 1-879707-41-1)
223. Freeman HP, Reuben SH. *Voices of a Broken System: Real People, Real Problems: President's Cancer Panel Report of the Chairman 2000-2001*. Bethesda, MD, USA: United States Department of Health and Human Services (DHHS), National Institutes of Health (NIH), National Cancer Institute (NCI), 2001. Available at [http://156.40.135.142:8080/webisodes/pcpvideo/voices\\_files/PDFfiles/PCPbook.pdf](http://156.40.135.142:8080/webisodes/pcpvideo/voices_files/PDFfiles/PCPbook.pdf).

## *Identifying Gaps in Breast Cancer Research*

224. Shinagawa SM. The excess burden of breast carcinoma in minority and medically underserved communities: application, research, and redressing institutional racism. *Cancer*. 2000, 88(5 Suppl):1217-23.
225. Schulman KA, Berlin JA, Harless W, Kerner JF, Sistrunk S, Gersh BJ, Dube R, Taleghani CK, Burke JE, Williams S, Eisenberg JM, Escarce JJ. The effect of race and sex on physicians' recommendations for cardiac catheterization. *N Engl J Med*. 1999, 340(8):618-26.
226. Katz SJ, Lantz PM, Paredes Y, Janz NK, Fagerlin A, Liu L, Deapen D. Breast cancer treatment experiences of Latinas in Los Angeles County. *Am J Public Health*. 2005, 95(12):2225-30.
227. Goel MS, Burns RB, Phillips RS, Davis RB, Ngo-Metzger Q, McCarthy EP. Trends in breast conserving surgery among Asian Americans and Pacific Islanders, 1992-2000. *J Gen Intern Med*. 2005, 20(7):604-11.
228. Gelber RP, McCarthy EP, Davis JW, Seto TB. Ethnic Disparities in Breast Cancer Management Among Asian Americans and Pacific Islanders. *Ann Surg Oncol*. 2006.
229. Matsumura S, Bito S, Liu H, Kahn K, Fukuhara S, Kagawa-Singer M, Wenger N. Acculturation of attitudes toward end-of-life care: a cross-cultural survey of Japanese Americans and Japanese. *J Gen Intern Med*. 2002, 17(7):531-9.
230. Prehn AW, Topol B, Stewart S, Glaser SL, O'Connor L, West DW. Differences in treatment patterns for localized breast carcinoma among Asian/Pacific islander women. *Cancer*. 2002, 95(11):2268-75.
231. Haggstrom DA, Quale C, Smith-Bindman R. Differences in the quality of breast cancer care among vulnerable populations. *Cancer*. 2005, 104(11):2347-58.
232. Kagawa-Singer M, Wellisch DK, Durvasula R. Impact of breast cancer on Asian American and Anglo American women. *Cult Med Psychiatry*. 1997, 21(4):449-80.
233. Gomez SL, France AM, Lee MM. Socioeconomic status, immigration/acculturation, and ethnic variations in breast conserving surgery, San Francisco Bay area. *Ethn Dis*. 2004, 14(1):134-40.
234. Morris CR, Cohen R, Schlag R, Wright WE. Increasing trends in the use of breast-conserving surgery in California. *Am J Public Health*. 2000, 90(2):281-4.
235. Maly RC, Umezawa Y, Ratliff CT, Leake B. Racial/ethnic group differences in treatment decision-making and treatment received among older breast carcinoma patients. *Cancer*. 2006, 106(4):957-65.

*California Breast Cancer Research Program*

236. Burhansstipanov L, Olsen SJ. Cancer prevention and early detection in American Indian and Alaska Native populations (excerpted from the book *Cancer Prevention in Diverse Populations: Cultural Implications for the Multidisciplinary Team* (2nd ed.), edited by Marilyn Frank-Stromborg, EdD, JD, FAAN, and Sharon J. Olsen, MS, RN, AOCN®, and excerpted by Jeannine Brant, RN, MS, AOCN®, is part of a series of clinically relevant reprints that will appear periodically in the *Clinical Journal of Oncology Nursing*). *Clin J Oncol Nurs*. 2004, 8(2):182-6.
237. Burhansstipanov L, Gilbert A, LaMarca K, Krebs LU. An innovative path to improving cancer care in Indian country. *Public Health Rep*. 2001, 116(5):424-33.
238. Burhansstipanov L. Cancer. In: Dixon M, Roubideaux Y. *Promises to Keep: Public Health Policy for American Indians and Alaskan Natives in the 21st Century*. Washington, DC, USA: American Public Health Association, 2001. (ISBN: 9780875530246)
239. Burhansstipanov L. Developing culturally competent community-based interventions. In: Weiner D, editor. *Cancer Research Interventions among the Medically Underserved*. Westport, CT, USA: Greenwood Publishing, 1999; pp. 167-83.
240. Killoran M, Moyer A. Surgical treatment preferences in Chinese-American women with early-stage breast cancer. *Psychooncology*. 2006, 15(11): 969-84.
241. Adams-Campbell LL, Ahaghotu C, Gaskins M, Dawkins FW, Smoot D, Polk OD, Gooding R, DeWitty RL. Enrollment of African Americans onto clinical treatment trials: study design barriers. *J Clin Oncol*. 2004, 22(4):730-4.
242. Petereit DG, Rogers D, Govern F, Coleman N, Osburn CH, Howard SP, Kaur J, Burhansstipanov L, Fowler CJ, Chappell R, Mehta MP. Increasing access to clinical cancer trials and emerging technologies for minority populations: the Native American Project. *J Clin Oncol*. 2004, 22(22):4452-5.
243. Burhansstipanov L, Bemis LT, Petereit D. Native American community's perspective and genetics. Monsen R, editor. *Genetic and Ethics in Nursing: New Questions in the Age of Genomic Health*. Silver Spring, MD, USA: American Nurses Publishing, 2007.
244. Chuang SC, Chen W, Hashibe M, Li G, Zhang ZF. Survival Rates of Invasive Breast Cancer among Ethnic Chinese Women Born in East Asia and the United States . *Asian Pac J Cancer Prev*. 2006, 7(2):221-6.

## *Identifying Gaps in Breast Cancer Research*

245. Horm JW, Devesa SS, Burhansstipanov L. Cancer incidence, mortality, and survival among racial and ethnic minority groups in the United States. In: Schottenfeld D, Fraumeni JF Jr. *Cancer Epidemiology and Prevention*. 2nd ed. New York, NY, USA: Oxford University Press, 1996. (ISBN: 0195053540)
246. Samet JM, Key CR, Hunt WC, Goodwin JS. Survival of American Indian and Hispanic cancer patients in New Mexico and Arizona, 1969-82. *J Natl Cancer Inst*. 1987, 79(3 ):457-63.
247. Aziz NM, Rowland JH. Cancer survivorship research among ethnic minority and medically underserved groups. *Oncol Nurs Forum*. 2002, 29(5):789-801.
248. Powell DR. Social and psychological aspects of breast cancer in African-American women. *Ann N Y Acad Sci*. 1994, 736:131-9.
249. Northouse LL, Caffey M, Deichelbohrer L, Schmidt L, Guziatek-Trojniak L, West S, Kershaw T, Mood D. The quality of life of African American women with breast cancer. *Res Nurs Health*. 1999, 22(6):449-60.
250. Taylor KL, Lamdan RM, Siegel JE, O'Connor B, Moran K, Lynch J. The role of coping in the psychological adjustment of African American women with early-stage breast cancer. *Cancer Res Therapy Control*. 1999, 8:139-54.
251. Ashing-Giwa K, Ganz PA, Petersen L. Quality of life of African-American and white long term breast carcinoma survivors. *Cancer*. 1999, 85(2):418-26.
252. McBride CM, Clipp E, Peterson BL, Lipkus IM, Demark-Wahnefried W. Psychological impact of diagnosis and risk reduction among cancer survivors. *Psychooncology*. 2000, 9(5):418-27.
253. Sun A, Wong-Kim E, Stearman S, Chow EA. Quality of life in Chinese patients with breast cancer. *Cancer*. 2005, 104(12 Suppl):2952-4.
254. Halbert, C. H., Barg, F. K., Weathers, B., Delmoor, E., Coyne, J., Wileyto, E. P., Arocho, J., Mahler, B., and Malkowicz, S. B. Differences in cultural values among African American and European American men. *Cancer Control*. 2007, in press.
255. Gotay CC. Quality of life research in Hawaii's cancer survivors. *Hawaii Med J* . 2001, 60(7):189, 193.
256. Fielding R, Lam WW. Measuring social impacts of breast carcinoma treatment in Chinese women. *Cancer*. 2004, 100(12):2500-11.

*California Breast Cancer Research Program*

257. Gotay CC, Holup JL, Pagano I. Ethnic differences in quality of life among early breast and prostate cancer survivors. *Psychooncology*. 2002, 11(2):103-13.
258. Winker MA. Measuring race and ethnicity: why and how? *JAMA*. 2004, 292(13):1612-4.
259. Berry JW. Immigration, acculturation and adaptation. *Applied Psychology*. 1997, 46(1):5-34.