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Breast Cancer Cause Beliefs: Chinese, Korean, and Mexican American Breast Cancer Survivors

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Abstract

This study examined causal attribution beliefs about breast cancer and the influence that these beliefs exert on health behavior change among breast cancer survivors (BCS). Focus groups with Chinese ($n = 21$), Korean ($n = 11$), and Mexican American ($n = 9$) BCS recruited through community- and hospital-based support groups were conducted. Interviews were audio-recorded, transcribed verbatim, and translated into English for thematic content analysis. Three themes concerning beliefs about breast cancer cause common to all three groups included (a) stress, (b) diet, and (c) fatalism. Causal beliefs corresponded to behavioral changes with women describing efforts to improve their diet and manage their stress. Ethnic minority BCS adhere to beliefs about what caused their cancer that influence their health behaviors. Providing quality health care to ethnically diverse cancer survivors requires cultural sensitivity to patients' beliefs about the causes of their cancer and awareness of how beliefs influence patients' health behaviors post diagnosis.

Keywords

breast cancer; cancer survivorship; ethnic minority survivors; cultural beliefs; health behaviors

Among Asian American and Latina women in the United States, breast cancer is the most common carcinoma and the leading cause of cancer mortality (American Cancer Society, 2012, 2013; Gomez et al., 2010; Gomez et al., 2013; Zhang, Wu, & Wu, 2011). Ethnic minority women experience greater morbidity and mortality (Lawsin, Erwin, Bursac, & Jandorf, 2011) and are diagnosed with greater rates of advanced disease. In recent years, breast cancer survival rates have increased for Asian American and Latina women (American Cancer Society, 2013). The U.S. Asian American and Latino population is rapidly growing, and thus, an increase in the number of Asian American and Latina women

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likely to develop breast cancer is expected along with the number of breast cancer survivors (BCS; Lee et al., 2013; McCracken et al., 2007).

Among Asian American and Latino populations, Chinese, Korean, and Mexican Americans represent three of the largest groups (U.S. Census Bureau, 2011). Asian American and Latina women share some commonalities including their collectivistic orientation (Freeberg & Stein, 1996; Gaines et al., 1997), high uninsured rates (Tang, Solomon, Yeh, & Worden, 1999), and a high influx of immigrants from the respective countries, but differences in cancer outcomes as seen in incidence, mortality, and survival rates are evident. These differences in cancer outcomes may, in part, be explained by differences in health beliefs and health behaviors. Therefore, a greater understanding of the health beliefs and health behaviors of ethnically and linguistically diverse BCS would be important to guide the development of culturally tailored interventions to help BCS develop accurate and adaptive beliefs about their cancer that can be incorporated into health behavior goals.

Given that healthy behaviors contribute to cancer risk reduction (Flynn, Betancourt, & Ormseth, 2011) and improvements in survival rates, a number of studies have recognized the relevance of health beliefs on health behavior changes (Costanzo, Lutgendorf, & Roeder, 2011; Pasick & Burke, 2008; Rabin & Pinto, 2006). For example, causal attributions for illness have been found to be associated with preventive health behaviors and health outcomes (Costanzo et al., 2011; Rabin & Pinto, 2006; Shiloh, Rashuk-Rosenthal, & Benyamini, 2002). Moreover, as confirmed by previous research, health beliefs and behaviors are influenced, in part, by culture (Ashing-Giwa, Padilla, Tejero, & Kagawa-Singer, 2003; Dein, 2004). Yet, minimal research has considered the role of cancer relevant health beliefs on health behaviors among ethnically diverse BCS.

Beliefs and illness representations, such as beliefs about the causes of illness, may affect BCS' decisions concerning their illness and health behaviors (Kowalkowski, Hart, Du, Baraniuk, & Latini, 2012; Rabin & Pinto, 2006). An illness representation is a set of beliefs, medically sound or not, that a patient has about an illness (Leventhal et al., 1997; Royer, Phelan, & Heidrich, 2009). Therefore, it is increasingly important to understand how the breast cancer experience may influence a survivor's interpretation and response to the breast cancer diagnosis, so that health professionals, in turn, can respond accordingly.

Culture, Health Beliefs, and Health Behaviors

As suggested by existing health research, health beliefs and health behaviors are influenced by culture (Dein, 2004; Tang et al., 1999; Wong-Kim, Sun, & DeMattos, 2003). Culture is a dynamic construct referring to a shared meaning of the world (Cohen, Abdallah Mabjish, & Zidan, 2011; Hugh, 2011) and is symbolized by the norms, values, attitudes, and behaviors of a group (Daniel, 2005). Culture influences how people interpret, rationalize, and manage the world around them (Lopez-Class et al., 2011). Therefore, beliefs about the causes of illness, including breast cancer, in part, reflect individual culture.

In previous research, women, both affected and unaffected by cancer, have cited health behavior factors such as diet (Wang, Miller, Egleston, Hay, & Weinberg, 2010), heredity (Kumar et al., 2007; Panjari, Davis, Fradkin, & Bell, 2012; Wang et al., 2010),

environmental factors (Costanzo et al., 2011; Kumar et al., 2007; Wang et al., 2010), stress (Kumar et al., 2007; Panjari et al., 2012), and fatalism (Flórez et al., 2009) as causal factors in the development of breast cancer. Chinese American women have reported that cancer is caused by diet (Simpson, 2003), immoral behavior (Wong-Kim et al., 2003), fate (Wong-Kim et al., 2003), and accumulation of anger (Simpson, 2003). Similarly Korean Americans believe that diseases, including cancer, are caused from excess negative forces such as chronic anger, misconduct, negative attitudes, or stress (Kim, Menon, Wang, & Szalacha, 2010). Latinas, primarily of Mexican American descent, report that diet (e.g., spicy foods, pork, food preservatives), tobacco, alcohol, caffeine, heredity, breast trauma (Hubbell, Chavez, Mishra, & Valdez, 1996; Thiel de Bocanegra, Trinh-Shevrin, Herrera, & Gany, 2009), birth control pills (Borrayo, Buki, & Feigal, 2005), and lack of, or insufficient, breastfeeding (Thiel de Bocanegra et al., 2009) are causal factors of cancer.

Moreover, health beliefs may influence how breast cancer experiences are defined, conceptualized, and interpreted in ways that manifest in future health behaviors (Daniel, 2005; Panjari et al., 2012; Rabin & Pinto, 2006) and cognitive emotions. BCS may make behavioral changes based on beliefs about what they feel may have caused their breast cancer (Panjari et al., 2012; Rabin & Pinto, 2006) that have positive health benefits (Flórez et al., 2009). For example, a BCS who reports stress as a breast cancer cause may initiate new behavioral regimens such as yoga and meditation (Panjari et al., 2012).

To date, few studies have examined causal attribution beliefs of breast cancer and their association with health behavior change in a sample of Chinese, Korean, and Mexican American BCS. The purpose of this study was (a) to describe the causal attribution beliefs of breast cancer and (b) to identify whether these beliefs influence health behavior changes. For purposes of this study and consistent with previous research (Royer et al., 2009), cause was defined as beliefs about the origin of breast cancer as well as what exacerbates the cancer.

Method

Study Design

A descriptive, qualitative study with Chinese, Korean, and Mexican American BCS using exploratory focus groups was conducted. An exploratory qualitative research approach was selected to examine the causal beliefs and their association with health behavior among ethnic minority BCS as research in this area is scant. A qualitative research approach provides the opportunity to document themes (or examine the patterns of meaning that emerge from the data) and meanings presented in the participants' own words to inform our understanding of social phenomenon. Focus groups produce a rich body of data expressed in the respondents' own words and context (Stewart, Shamdasani, & Took, 2007). For this study, a focus group interview guide was developed to elicit information relevant to beliefs about the causes of breast cancer across all three ethnic groups. Using an open-ended script, participants were asked questions such as the following: (a) How has your ethnic and cultural background influenced your breast cancer experience? (b) What beliefs (in general and culturally based) exist about the causes of breast cancer? (c) Did you make any health changes after your breast cancer diagnosis and treatment? If yes, what changes? These

questions were part of a more comprehensive discussion about health behaviors after a cancer diagnosis. Although the focus group interview guide did not directly address the association between causal breast cancer beliefs with subsequent health behavior change, notions of this association emerged as women discussed these beliefs.

Sample and Procedures

A purposive sample was recruited through community- and hospital-based support groups and hospital cancer registries in Los Angeles, California. Detailed information concerning recruitment and study procedures are described elsewhere (Lim, Gonzalez, Wang-Letzkus, Baik, & Ashing-Giwa, 2013). Inclusion criteria for participants were women (a) diagnosed with breast cancer, (b) 1 to 5 years post diagnosis, (c) not diagnosed with another disabling medical or psychiatric condition, (d) 18 years of age or older, and (e) self-identified as Chinese, Korean, or Mexican American, either born in the United States or emigrated from China, Korea, or Mexico, respectively, to the United States.

Prior to data collection, an Institutional Review Board for the Protection of Human Subjects approved the study. Fifty survivors agreed to participate, and 42 survivors attended a focus group (participation rate 84%) held at a local community center or hospital. Six focus groups for Chinese ($n = 21$), Korean ($n = 11$), and Mexican American ($n = 10$) BCS were conducted, two focus group discussions per ethnic group, with 5 to 11 women in each group. Focus group facilitators were linguistically and culturally matched to participants. Facilitators prompted discussion about women's beliefs and cancer experience using a semi-structured interview approach. Participants completed a brief questionnaire that included standard demographic questions, medical information (i.e., cancer stage, cancer treatment), and health behaviors (e.g., changes in diet and physical activity). Participants were provided with refreshments and a \$20 grocery gift certificate. Focus groups ranged from 90 to 120 min in duration.

Qualitative Data Analysis

Focus groups were audio-recorded, transcribed verbatim, translated to English, and imported into NVivo (QSR NVivo 9, Copyright© 2010), a qualitative software for data storage and coding. Qualitative content analysis, a method that enables the interpretation of context through the systematic classification of coding and identification of emerging themes or patterns, was used (Hsieh & Shannon, 2005). Bilingual staff members, through direct comparisons of the audio recordings, verified each transcription. Similarly, individuals from each of the respective cultural groups (Chinese, Korean, and Mexican American) translated each set of focus group transcriptions following back-translation methods (Brislin, 1970) to achieve conceptual equivalence. Consistent with the process for translation outlined in prior studies (Shumaker & Naughton, 1995), translation and back translation of the Chinese, Korean, and Spanish language transcriptions were repeated until the translators felt the non-English versions corresponded closely with the English version. Organization of emerging codes involved first reading each transcript line by line and allowing the data to inform open coding to identify themes and patterns within the transcript text (Ryan & Bernard, 2003). The coding process was grounded in the data, and the categories inductively emerged from data rather than applying a predetermined coding framework (Miles & Huberman, 1994).

Two trained coders reviewed the transcripts to identify basic patterns and recurrent themes using an open coding process. These initial codes were grouped together under primary codes that represented the broader pattern, and they were sorted by their similarities and relationships. The coding process was iterative, and themes evolved (added, deleted, and merged) as re-readings were completed and analysis progressed. After prominent themes emerged, a coding guide was developed consisting of summary statements that capture participants' breast cancer beliefs and health behavior changes. Transcripts were then individually coded, two coders per transcript, for themes and patterns using the coding guide, and then extracted for analysis. In sum, the process involved comparing findings, discussing divergent coding, and resolving differences of interpretation when necessary. We define a "common theme" as one that all three ethnic groups described. To add methodological rigor and to reduce researcher bias, all transcripts were coded with an 80% or greater reliability between researchers (Patton, 2002).

Results

Demographic and Medical Characteristics

The sample was composed of 42 BCS ranging in age from 38 to 83 years, with a mean age of 53 ($SD = 9$). Participants' mean number of years living in the United States was 20 years ($SD = 10$). Participants' mean years since initial diagnosis was 2.5 ($SD = 1.9$). The majority reported undergoing mastectomies (76%) and adjuvant chemotherapy (62%). For most of the demographic and medical information collected, no significant differences were observed across the three groups, with the exception of education and health insurance coverage (see Table 1).

Causal Attribution Beliefs About Breast Cancer

Themes and subthemes of beliefs about the causes of breast cancer are shown in Table 2. Three primary themes about the cause of breast cancer were identified: (a) stress, (b) diet, and (c) fatalism. Within stress, three subthemes emerged: (a) acculturation stress, (b) family stress, and (c) lifestyle stress. Within diet, two subthemes emerged: American diet and cultural diet. All three groups cited fatalism, or beliefs that cancer was predetermined and governed by external forces such as their predestination, fate, and destiny, as a cause of breast cancer (Powe & Finnie, 2003). Although all themes were mentioned across the groups, ethnic differences to the extent to which women endorsed the causal breast cancer beliefs were noted.

Stress

Of the three themes, stress as a causative explanation for breast cancer was referenced most often. Among the groups, Mexican American women most frequently described stress as causing their breast cancer followed by Korean American and Chinese American BCS. Mexican American women cited tension, or stress, as a recurrent problem in their lives prior to their breast cancer diagnosis. Korean American women tended to highlight work and lifestyle-related stress while Chinese American BCS tended to be less specific about the types of stress that caused their breast cancer.

Chinese: I think stress can be a contributing factor.

Korean: It was due to the stress.

Mexican: I believe that it [breast cancer] is due to tension problems, when someone is stressed.

Acculturation stress—Korean and Mexican American women reported acculturation-related stress, or difficulty resulting from the acculturation process (e.g., language difficulties, incongruent cultural values), as having contributed to their breast cancer. Specifically, Korean American women tended to emphasize stress from immigrating and adjusting to the United States, while Mexican American women tended to characterize American culture as being more individual rather than collectivistic focused and therefore less conducive to socially supportive activities. However, Chinese American BCS did not report acculturation stress as having contributed to their breast cancer.

Korean: When I came to America, it was difficult to adjust. These things had an effect on breast cancer. All that stress.

Mexican: We were talking about stress and the lack of time, we were talking about everyone being occupied, it is different in our [Mexican] culture—everyone has time to visit neighbors and family but in this culture [the United States] they are busy so we are alone. Everyone works, studies and has too many activities to lend aid -in that the difference of cultures affects us [health].

Family stress—All Mexican American BCS referenced family stress as contributing to their cancer, while Korean American and Chinese American women also cited family stress but to a lesser degree. Specifically, Mexican American women described that much of their stress resulted from their role as the family “Pillar” and mentioned that when one family member was affected by illness, the entire family was affected.

Chinese: The main cause is stress from my family.

Korean: The children’s school problems, the stress that comes with children, and stress from parents. Worrying about children, and rides, the issues that arise in school, how to raise children. Stress from the children’s problems.

Mexican: The family is a source of stress. I think we are the Pillars of our families and it affects us a lot.

Lifestyle stress—Lifestyle stress was mentioned as a major contributing factor in their breast cancer across all three groups and appeared to be most salient among Mexican American women. Chinese and Korean American BCS believed that in addition to living paced lives, overwork had an impact on their diagnosis. Mexican American women described living fast-paced lives, with little time to take care of one’s health or their family as having a major impact on the development of their breast cancer.

Chinese: My cancer was partly due to the stress from work.

Korean: As I see it, it [breast cancer] is caused by stress and overwork. Yes, people work overtime, and there is no time to be sick.

Mexican: We lead a stressful life, time is all very limited and I believe that stress is another factor as to why we get sick and why we do not have more time to take care of our health.

Diet Breast Cancer Beliefs

Compared with Korean American women, Chinese American and Mexican American women were more likely to mention diet, or poor eating habits, as having caused their breast cancer. Chinese and Mexican American women made specific references to poor nutrition as an issue and Korean American women tended to attribute breast cancer to overeating.

Chinese: Diet is the number one factor. Remember, you are what you eat! Many diseases come through mouth.

Korean: In the past, I did not put any thought into what I ate. I just ate when someone brought something to me.

Mexican: Bad nutrition, from the time I was a little girl I had poor nutrition.

American diet—Korean and Mexican Americans reported having developed breast cancer from eating foods that are part of the traditional American diet; however, this was much more commonly reported among Mexican American women. Approximately half of the Mexican American women believed chemicals in American produce and meat were the major causes of breast cancer, while for Korean American women, less access to fresh foods was mentioned as a problem.

Korean: It has been more difficult to eat healthy here than in Korea. I realized this after eating different varieties of bread. When I was in Korea, it was easy to eat [fresh] fish. Here there is a lot of frozen fish. Also I couldn't even think about it because it was so expensive. In this regard Korea is better to eat healthy.

Mexican: I believe that food because in the case of animals they are raised with hormones for fast growth and higher production of meat. In regard to vegetables, I am a witness that they use a lot of pesticides. I was raised in an area where there is a lot of agriculture and I realized how much contamination there is.

Cultural diet—Participants' narratives revealed that culture-specific foods were a dimension of diet that they blamed for contributing to their breast cancer. Chinese American women reported that their cancer diagnosis was related to their Chinese diet and cited tofu and soybean-related foods, as well as rooster, as harmful to their health. Similar to American diet causal beliefs, Mexican American BCS believed that their traditional cultural diet played a role in their cancer. Specifically, Mexican American BCS stated fried foods and a preference for red meat in their culture as being harmful.

Chinese: I asked my doctor if my breast cancer was caused by eating tofu.

Mexican: Yes, the fats—before I was less aware that pozole, menudo, fried, tacos, or chile rellenos and all that is fried—is one more factor that contributes to more illnesses.

Fatalism

Across all groups, participants indicated that their cancer was a result of fate, their destiny, or a predetermined cause. Fatalistic beliefs were most common among Mexican American survivors, with individuals describing being predestined to develop breast cancer. Chinese American women believed breast cancer was a result of fate or Satan, while Korean American women felt that their health was out of their control or a punishment. In addition, Mexican American BCS stated their cancer was a result of a retribution for their past wrongdoings (*estamos pagando*).

Chinese: I believe disease came from Satan, I asked God to lift it from me.

Korean: I wondered why did I get this? Although I had not done anything wrong, I got the feeling that I was being punished.

Mexican: Supposedly it's a punishment. We are paying.

Behavior Changes Corresponding With Cancer Beliefs

Participants' breast cancer beliefs about stress and diet resulted in corresponding behavior changes related to stress management and diet changes. Participants across all groups expressed making changes to reduce their stress and incorporating relaxation and breathing techniques (e.g., *Tai chi*, listening to music). In addition, participants across all groups consistently expressed changes to their dietary habits and nutrition intake, including an increase in fruit and vegetable consumption.

Stress Management Changes

General stress management was frequently reported across all groups. Notably, stress was cited as a cause of breast cancer and consequently many women reported efforts to manage their stress after their breast cancer diagnosis. For example, some women described attempts to manage their negative cognitive emotions such as anger and avoiding stressful situations.

Chinese: I calm down and caution myself not to get angry.

Korean: I avoid everything that could cause me stress. I try not to get so stressed.

Mexican: I try not to focus on problems or worry about them.

Relaxation and breathing techniques—Utilizing new relaxation and breathing techniques as a form of stress management was most frequently reported among Chinese American BCS and Mexican American BCS. Chinese American BCS mentioned acupressure massage, *tai chi*, and deep breathing as common forms of relaxation. Korean American BCS also mentioned the use of acupuncture, and in addition, many described the use of prayer to help reduce their stress. Mexican American BCS described engaging in relaxation techniques including yoga.

Chinese: He also taught us the use of acupressure to balance mood and temperament.

Korean: I tried acupuncture treatment.

Mexican: I tried yoga to relax.

General Diet Changes

Participants from all groups mentioned an increase of fruit and vegetables in their diet and a reduction of red meat. In terms of general diet changes, Korean American BCS reported making the greatest change, followed by Mexican American BCS and Chinese American BCS. In particular, Korean American women overwhelmingly indicated an increased awareness in their food choices and monitoring what they ate. Mexican American BCS mentioned adopting healthier eating practices and reducing their intake of processed foods. Several Mexican American women also described how their dietary changes resulted in weight loss for them. In addition, Mexican American women began to cultivate their own fruits and vegetables and expressed concerns with chemicals in produce purchased at grocery stores as previously stated in their beliefs about breast cancer. Similar to Mexican American BCS, Chinese American BCS reduced their red meat intake and increased their intake of fruits and vegetables.

Chinese: Now my diet consists of less meat and much more vegetables.

Korean: In the past, I did not put any thought into what I ate. I just ate when someone brought something to me. [Now] I try to eat good food a lot.

Mexican: We also cultivate in the home, food that comes with less chemicals. We grow pumpkins, carrots, tomatoes and chilies.

Cultural Diet Changes

Of the three groups, Mexican American women were the most likely to report having made changes to their cultural diet. These changes were reflected primarily around fried and higher fat foods, with Mexican American women opting to use healthier cooking oils such as olive oil. Chinese and Korean American women who reported concerns about their use of soy or tofu before their cancer reported switching to organic products.

Chinese: Soymilk was on the no-no list.

Korean: An acquaintance of my mother who does organic farming at home grew the organic soy plants, and my mother had the powder sent to me, so I have been eating it for 2 years.

Mexican: I tried to reduce in all that is vitamin “T” tacos, tortas, tamales—all that makes you fat, everything that is greasy, everything that is tasty everything that contributes to the development of illness—yes I was more aware of food.

Discussion

This study sought to identify causal attribution beliefs about breast cancer and to examine whether these beliefs corresponded to subsequent health behavior changes in Chinese,

Korean, and Mexican American BCS. Participants identified stress (Costanzo et al., 2011; Panjari et al., 2012), diet (Costanzo et al., 2011; Sun, Wong-Kim, Stearman, & Chow, 2005), and fatalism (Flórez et al., 2009) as contributing to the development of their breast cancer. Despite the lack of research evidence for an association between breast cancer and stress and fatalistic beliefs, our findings provide qualitative evidence indicating that our study sample comprised of ethnic minority women endorsed stress and fate as having contributed to the development of their breast cancer. The belief that stress may contribute to breast cancer is not a new development in the literature. In fact, several studies (Michael et al., 2009; Peled, Carmil, Siboni-Samocha, & Shoham-Vardi, 2008; Surtees, Wainwright, Luben, Khaw, & Bingham, 2010) have examined the association of stress and breast cancer incidence and results have yielded conflicting and unconvincing results, with some finding an association between stress and breast cancer risk and others having found no association (Panjari et al., 2012). To date, the existing research on fatalism has largely originated from the cancer prevention (e.g., screening) literature (Cheng, Sit, Twinn, Cheng, & Thorne, 2013) and has included primarily non-Hispanic White cancer-free participants. Findings also highlight the notion of fatalism as an important breast cancer causal belief, and future research should examine the influence of fatalism along the cancer continuum, from the prevention to survivorship phase.

Study findings are also consistent with existing research in that (Rabin & Pinto, 2006) women in our sample were more likely to adopt healthier behaviors (Costanzo et al., 2011; Lopez-Class et al., 2011; Panjari et al., 2012) if they understood how the behavior was connected to health outcomes. For example, post-treatment health behavior changes frequently matched participants' causal attributions, with women who attributed their cancer to stress and diet making corresponding improvements, such as engaging in stress reduction strategies and reducing culture-specific foods high in fat. Moreover, findings provide support for Leventhal's Common Sense Model (Leventhal et al., 1997; Royer et al., 2009) and previous research (Costanzo et al., 2011; Rabin & Pinto, 2006; Shiloh et al., 2002), which suggest that beliefs centered around illness do in fact play a role in behaviors.

There is minimal information on women from diverse ethnic and socioeconomic backgrounds. Results from the present study provide key domain areas for educational efforts to improve cancer care to the growing number of ethnic minority BCS (Lopez-Class et al., 2011). With more in-depth information about how beliefs influence corresponding health behaviors, clinicians may be better equipped to appropriately deliver individualized care to BCS. Further research on the intersection between ethnicity, culture, health beliefs, and health behaviors may add to the understanding of the observed ethnic disparities in cancer survivorship (Janz et al., 2009). Moreover, exploring results from a cultural context allows research to infer culture-specific associations between culture, breast cancer beliefs, and health behavior changes.

Current study results should be interpreted with some caution in light of some study limitations. First, some recruitment challenges were encountered, and therefore, equivalent sample sizes across ethnic groups were not achieved. Second, although facilitators of the same ethnic background as the study participants led the focus groups, each focus group was led by a different facilitator. Therefore, findings may have, in part, been influenced by a

facilitator's communication and probing style. Although our study had some important limitations, these limitations are not unique to focus group research and should not be considered fatal flaws. Given these caveats, the current study had several notable strengths including community-based recruitment, in-depth information about health beliefs, and a rigorous approach to qualitative analysis.

Our findings emphasize the importance of considering beliefs about stress, diet, and fatalism, and considering differences in beliefs across ethnic minority survivors. Our findings provide an important insight into how Chinese, Korean, and Mexican American BCS' beliefs of the causes of their cancer are shaped by beliefs around stress, diet, and fatalism. As the U.S. population becomes more ethnically and linguistically diverse, professionals in health care settings will need to be knowledgeable about their patients' health beliefs and their association to health behaviors. Further exploration of illness beliefs and their effect on health among ethnically diverse patients will inform efforts to develop culturally competent oncology health care providers to improve outcomes among diverse BCS.

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References

- American Cancer Society. Cancer facts & figures for Hispanics/Latinos 2012–2014. Atlanta, GA: Author; 2012.
- American Cancer Society. Cancer facts & figures 2013. Atlanta, GA: Author; 2013.
- Ashing-Giwa KT, Padilla G, Tejero J, Kagawa-Singer M. Understanding the breast cancer experience of Asian American women. *Psycho-Oncology*. 2003; 12:38–58. [PubMed: 12548647]
- Borrayo EA, Buki LP, Feigal BM. Breast cancer detection among older Latinas: Is it worth the risk? *Qualitative Health Research*. 2005; 15:1244–1263. [PubMed: 16204403]
- Brislin RW. Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*. 1970; 1:185–216.
- Cheng H, Sit JWH, Twinn SF, Cheng KKF, Thorne S. Coping with breast cancer survivorship in Chinese women: The role of fatalism or fatalistic voluntarism. *Cancer Nursing*. 2013; 36:236–244. [PubMed: 22964870]
- Cohen M, Abdallah Mabjish A, Zidan J. Comparison of breast cancer survivors and health controls for spousal relationship, body image, and emotional distress. *Quality of Life Research*. 2011; 20:191–198. [PubMed: 20859767]
- Costanzo ES, Lutgendorf SK, Roeder SL. Common-sense beliefs about cancer and health practices among women completing treatment for breast cancer. *Psycho-Oncology*. 2011; 20:53–61.10.1002/pon.1707 [PubMed: 20148441]
- Daniel TLS. A longitudinal study of Chinese cultural beliefs about adversity, psychological well-being, delinquency, and substance abuse in Chinese adolescents with economic disadvantage. *Social Indicators Research*. 2005; 71:385–409.
- Dein S. Explanatory models of and attitudes towards cancer in different cultures. *The Lancet Oncology*. 2004; 5:119–124. [PubMed: 14761816]

- Flórez KR, Aguirre AN, Viladrich A, Céspedes A, Cruz DL, Abraído-Lanza AF. Fatalism or destiny? A qualitative study and interpretative framework on Dominican women's breast cancer beliefs. *Journal of Immigrant and Minority Health*. 2009; 11:291–301. [PubMed: 18253833]
- Flynn PM, Betancourt H, Ormseth SR. Culture, emotion, and cancer screening: An integrative framework for investigating health behavior. *Annals of Behavioral Medicine*. 2011; 42:79–90. [PubMed: 21472484]
- Freeberg AL, Stein CH. Felt obligation towards parents in Mexican-American and Anglo-American young adults. *Journal of Social and Personal Relationships*. 1996; 13:457–471.
- Gaines SO, Marelich WD, Bledsoes KL, Steers WN, Henderson MC, Granrose CS, Page MS. Links between race/ethnicity and cultural values as mediated by racial/ethnic identity and moderated by gender. *Journal of Personality and Social Psychology*. 1997; 72:1460–1476. [PubMed: 9177025]
- Gomez SL, Clarke CA, Shema SJ, Chang ET, Keegan THM, Glaser SL. Disparities in breast cancer survival among Asian women by ethnicity and immigrant status: A population-based study. *American Journal of Public Health*. 2010; 100:861–869. [PubMed: 20299648]
- Gomez SL, Noone AM, Lichtensztajn DY, Scoppa S, Gibson JT, Liu L, Miller BA. Cancer incidence trends among Asian American populations in the United States, 1990–2008. *Journal of the National Cancer Institute*. 2013; 105:1096–1110. [PubMed: 23878350]
- Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qualitative Health Research*. 2005; 15:1277–1288. [PubMed: 16204405]
- Hubbell F, Chavez L, Mishra S, Valdez R. Beliefs about sexual behavior and other predictors of Papanicolaou smear screening among Latinos and Anglo women. *Archives of Internal Medicine*. 1996; 156:2353–2358. [PubMed: 8911242]
- Hugh ML. Operationalizing culture: Consequences of the definition of cultural intelligence. *Military Intelligence Professional Bulletin*. 2011; 37:67–68.
- Janz NK, Mujahid MS, Hawley ST, Griggs JJ, Alderman A, Hamilton AS, Katz SJ. Racial/ethnic differences in quality of life after diagnosis of breast cancer. *Journal of Cancer Survivorship*. 2009; 3:212–222. [PubMed: 19760151]
- Kim JH, Menon U, Wang E, Szalacha L. Assess the effects of culturally relevant intervention on breast cancer knowledge, beliefs, and mammography use among Korean American women. *Journal of Immigrant and Minority Health*. 2010; 12:586–597.10.1007/s10903-009-9246-7 [PubMed: 19373555]
- Kowalkowski MA, Hart SL, Du XL, Baraniuk S, Latini DM. Cancer perceptions: Implications from the 2007 health information national trends survey. *Journal of Cancer Survivorship*. 2012; 6:287–295. [PubMed: 22457218]
- Kumar AS, Cureton E, Shim V, Sakata T, Moore DH, Benz CC, Hwang ES. Type and duration of exogenous hormone use affects breast cancer histology. *Annals of Surgical Oncology*. 2007; 14:695–703. [PubMed: 17103262]
- Lawsin C, Erwin D, Bursac Z, Jandorf L. Heterogeneity in breast and cervical cancer screening practices among female Hispanic immigrants in the United States. *Journal of Immigrant and Minority Health*. 2011; 13:834–841.10.1007/s10903-010-9378-9 [PubMed: 20734140]
- Lee S, Chen L, Ma GX, Fang CY, Oh Y, Scully L. Challenges and needs of Chinese and Korean American breast cancer survivors: In-depth interviews. *North American Journal of Medical Sciences*. 2013; 6:1–8.
- Leventhal, H.; Benyamini, Y.; Brownlee, S.; Diefenbach, M.; Leventhal, EA.; Patrick-Miller, L.; Robitaille, C. Perceptions of health and illness. London, England: Harwood; 1997.
- Lim JW, Gonzalez P, Wang-Letzkus MF, Baik O, Ashing-Giwa KT. Health behavior changes following breast cancer treatment: A qualitative comparison among Chinese American, Korean American, and Mexican American survivors. *Journal of Health Care for the Poor and Underserved*. 2013; 24:599–618. [PubMed: 23728031]
- Lopez-Class M, Perret-Gentil M, Kreling B, Caicedo L, Mandelblatt J, Graves KD. Quality of life among immigrant Latina breast cancer survivors: Realities of culture and enhancing cancer care. *Journal of Cancer Education*. 2011; 26:724–733. [PubMed: 21706194]

- McCracken M, Olsen M, Chen MSJ, Jemal A, Thun M, Cokkinides V, Ward E. Cancer incidence, mortality, and associated risk factors among Asian Americans of Chinese, Filipino, Vietnamese, Korean, and Japanese ethnicities. *California Cancer Journal of Clinicians*. 2007; 57:190–205.
- Michael YL, Carlson NE, Chlebowski RT, Aickin M, Weihs KL, Ockene JK, Ritenbaugh C. Influence of stressors on breast cancer incidence in the Women's Health Initiative. *Health Psychology*. 2009; 28:137–146. [PubMed: 19290705]
- Miles, MB.; Huberman, AM. *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: SAGE; 1994.
- Panjari M, Davis SR, Fradkin P, Bell RJ. Breast cancer survivors' beliefs about the causes of breast cancer. *Psycho-Oncology*. 2012; 21:724–729.10.1002/Pon.1949 [PubMed: 21384468]
- Pasick RJ, Burke NJ. A critical review of theory in breast cancer screening promotion across cultures. *Annual Review of Public Health*. 2008; 29:351–368.10.1146/annurev.publhealth.29.020907.143420
- Patton, MQ. *Qualitative evaluation and research methods*. 3. Newbury Park, CA: SAGE; 2002.
- Peled R, Carmil D, Siboni-Samocha O, Shoham-Vardi I. Breast cancer, psychological distress and life events among young women. *BMC Cancer*. 2008; 8:Article 245.
- Powe BD, Finnie R. Cancer fatalism: The state of the science. *Cancer Nursing*. 2003; 26:454–465. quiz 466–457. [PubMed: 15022977]
- Rabin C, Pinto B. Cancer-related beliefs and health behavior change among breast cancer survivors and their first-degree relatives. *Psycho-Oncology*. 2006; 15:701–712.10.1002/pon.1000 [PubMed: 16302292]
- Royer HR, Phelan CH, Heidrich SM. Older breast cancer survivors' symptom beliefs. *Oncology Nursing Forum*. 2009; 36:463–470. [PubMed: 19581237]
- Ryan GW, Bernard HR. Techniques to identify themes. *Field Methods*. 2003; 15:85–109.10.1177/1525822X02239569
- Shiloh S, Rashuk-Rosenthal D, Benyamini Y. Illness causal attributions: An exploratory study of their structure and associations with other illness cognitions and perceptions of control. *Journal of Behavioral Medicine*. 2002; 25:373–394. [PubMed: 12136498]
- Shumaker, SA.; Naughton, MJ. The international assessment of health-related quality of life: A theoretical perspective. In: Shumaker, SA.; Berzon, RA., editors. *The international assessment of health-related quality of life: Theory, translation, measurement and analysis*. Oxford, UK: Rapid Communication; 1995. p. 3-10.
- Simpson BP. Family beliefs about diet and traditional Chinese medicine for Hong Kong women with breast cancer. *Oncology Nursing Forum*. 2003; 30:834–840. [PubMed: 12949596]
- Stewart, DW.; Shamdasani, PN.; Took, DW. *Focus groups: Theory and practice*. Vol. 20. Thousand Oaks, CA: SAGE; 2007.
- Sun A, Wong-Kim E, Stearman S, Chow EA. Quality of life in Chinese patients with breast cancer. *Cancer Supplement*. 2005; 104:2952–2954.
- Surtees PG, Wainwright NWJ, Luben RN, Khaw KT, Bingham SA. No evidence that social stress is associated with breast cancer incidence. *Breast Cancer Research and Treatment*. 2010; 120:169–174. [PubMed: 19572196]
- 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. *Journal of Behavioral Medicine*. 1999; 22:419–436. [PubMed: 10586380]
- Thiel de Bocanegra H, Trinh-Shevrin C, Herrera AP, Gany F. Mexican immigrant male knowledge and support toward breast and cervical cancer screening. *Journal of Immigrant and Minority Health*. 2009; 11:326–333.10.1007/s10903-008-9161-3 [PubMed: 18551367]
- U.S. Census Bureau. *The Hispanic population: 2010*. 2011. Retrieved from <http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf>
- Wang C, Miller SM, Egleston BL, Hay JL, Weinberg DS. Beliefs about the causes of breast and colorectal cancer among women in the general population. *Cancer Causes & Control*. 2010; 21:99–107.10.1007/s10552-009-9439-3 [PubMed: 19787437]
- Wong-Kim E, Sun A, DeMattos MC. Assessing cancer beliefs in a Chinese immigrant community. *Cancer Control*. 2003; 10(5):22–28. [PubMed: 14581901]

Zhang Y, Wu CX, Wu F. Status and trends of breast cancer mortality in Chinese females. Chinese Journal of Preventive Medicine. 2011; 45:69–90.

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Table 1

Participants' Demographic and Medical Characteristics.

Variables	Chinese (<i>n</i> = 21)	Korean (<i>n</i> = 11)	Mexican (<i>n</i> = 10)	<i>p</i> ^a
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Education ^b				
<High school	0 (0)	1 (9)	7 (70)	<.001
High school graduated	1 (5)	3 (27)	2 (20)	
>High school	19 (95)	7 (64)	1 (10)	
Health insurance ^c				
No insurance	2 (9)	3 (23.1)	1 (9)	.02
Public (Medicare/Medicaid)	7 (30)	10 (76.9)	7 (64)	
Private	14 (61)	0 (0)	3 (27)	
Employment status ^b				
Employed	9 (45)	2 (18)	2 (20)	.12
Homemaker	5 (25)	8 (73)	5 (50)	
Other	6 (30)	1 (9)	3 (30)	
The first language				
English	2 (10)	0 (0)	0 (0)	.35
Own language	19 (90)	11 (100)	10 (100)	
Marital status				
Single	2 (10)	1 (9)	0 (0)	.75
Married	14 (67)	9 (82)	8 (80)	
Other	5 (23)	1 (9)	2 (20)	
Cancer stage ^b				
I	5 (24)	2 (18)	2 (22)	.55
II	11 (52)	6 (55)	6 (67)	
III	5 (24)	3 (27)	1 (11)	
Type of surgery ^b				
Lumpectomy	4 (19)	2 (20)	0 (0)	.14
Mastectomy	17 (81)	8 (80)	6 (86)	
Mastectomy + reconstruction	0 (0)	0 (0)	1 (14)	
Cancer treatment (Yes)				
Chemotherapy	13 (62)	6 (55)	7 (70)	.85
Radiation therapy	7 (33)	5 (46)	6 (60)	.50
Hormonal therapy	7 (33)	3 (27)	2 (20)	.82

^aKruskal–Wallis or chi-square tests were conducted to investigate differences in variables among three ethnic groups.^bNumbers do not add to total sample size because of the missing values.^cMultiple responses.

Table 2Relationship Between Breast Cancer Beliefs and Health Behavior Changes ($N = 42$).

Breast cancer beliefs	Examples
1. Diet	
i. American diet	Processed foods, high in chemicals and hormones
ii. Cultural diet	Fried foods, foods high in fat, red meats,
2. Stress	
i. Acculturation stress	Language barriers, change in lifestyle
ii. Family stress	Spousal and children-related stress
iii. Lifestyle factors	Overworked, fast-paced life
3. Fatalism	Destiny, God's will
Corresponding health behavior changes	Examples
1. Diet	Increase in fruits/vegetables, reduction of red meat
i. Cultural diet	Reduction of fried foods, soybean paste
2. Stress management	Decrease of negative emotions (e.g., anger), reduction of stress producing thoughts
i. Relaxation techniques	Acupressure, yoga, deep breathing