# Cultural Health Beliefs and Health Behaviors in Asian American Breast Cancer Survivors: A Mixed-Methods Approach

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**B**reast cancer is the leading type of cancer in Asian Americans, one of the fastest growing ethnic groups in the United States (American Cancer Society, 2011). A need exists to investigate outcomes among Asian American subgroups because of the significant heterogeneity in language, religion, lifestyle, and culture within that population (Fuller-Thomson, Brennenstuhl, & Hurd, 2011). The current study focused on Korean Americans, who rank as the fourth largest Asian group in the United States (U.S. Census Bureau, 2012). Few studies of Korean American breast cancer survivors (KABCS) exist, but two reported that the health-related quality of life (HRQOL) of KABCS was significantly lower than that of other ethnic groups (Kim, Ashing-Giwa, Kagawa-Singer, & Tejero, 2006; Lim, Gonzalez, Wang-Letzkus, & Ashing-Giwa, 2009). Understanding their distinct culture may extend the knowledge regarding the post-treatment phase, particularly given that sociocultural barriers to follow-up and rehabilitative care exist for KABCS (Lim, Yi, & Zebrack, 2008).

Cancer survivors' adoption of health-promotion behaviors (e.g., regular exercise; consumption of a plant-based, low-fat diet; appropriate stress-management techniques) after treatment may impact their long-term treatment responses, recovery, disease-free survival, general health, and HRQOL (Mosher et al., 2009; Sprague, Trentham-Dietz, Nichols, Hampton, & Newcomb, 2010). An experience with cancer can lead survivors to make positive changes in their health behaviors, and the experience constitutes a powerful, motivational teachable moment (Demark-Wahnefried, Aziz, Rowland, & Pinto, 2005). However, some survivors do not adhere to guidelines for healthy behaviors. Therefore, research is needed to identify the factors that influence the adoption of healthy behaviors.

Several studies have suggested that healthy behaviors may be attributed to the patient's health beliefs based on his or her unique culture, hereafter termed *cultural health beliefs* (Chung, Cimprich, Janz, & Mills-Wisneski,

**Purpose/Objectives:** To explore the relationships between cultural health beliefs, acculturation, treatment-related decisions, the doctor-patient relationship, and health behaviors among Asian American breast cancer survivors (AABCS), and the contextual meaning of those relationships among Korean American breast cancer survivors (KABCS) and AABCS.

**Design:** A mixed-methods triangulation design.

**Setting:** Community- and hospital-based support groups and hospital cancer registries in California.

**Sample:** 206 AABCS were included in the quantitative phase, and two focus groups were conducted with KABCS (N = 11) during the qualitative phase.

**Methods:** The quantitative phase used secondary data for AABCS. Standardized (i.e., cultural health beliefs, doctor-patient relationship, and acculturation) and newly developed instruments (i.e., health behaviors and treatment-related decisions) were used in the quantitative phase. An exploratory, descriptive, qualitative study of KABCS then was undertaken.

**Main Research Variables:** Cultural health beliefs, acculturation, treatment-related decisions, the doctor-patient relationship, and health behaviors.

**Findings:** Inter-intrapersonal health beliefs, doctor-patient relationship, and shared decision making were positively associated with adopting healthy lifestyle practices. Findings from the quantitative phase were explained further by the diverse themes that emerged in the KABCS focus groups.

**Conclusions:** This study provides new knowledge about cultural health beliefs and health behaviors among KABCS using a mixed-methods approach.

**Implications for Nursing:** The results highlight the need for greater attention to the cultural contexts of AABCS to promote healthy behaviors and recognition of the significant relationship between health professionals and breast cancer survivors.

2009; Lim et al., 2009). Cultural health beliefs relate to the ways that people in the same culture perceive illness, explain pain, and define quality care (Wong-Kim, Sun, & DeMattos, 2003). For example, the cultural health beliefs of Korean Americans emphasize that stress, a major possible cause of breast cancer, may motivate Korean Americans to improve their stress-management skills

after cancer treatment (Ashing-Giwa, Padilla, Tejero, & Kagawa-Singer, 2003). Chinese American women tend to rely on traditional medicine for cancer treatment (Wu, Guthrie, & Bancroft, 2005). Therefore, culture can affect the pattern of health behavior according to ethnicity and may determine diet, exercise, and health-seeking practices (Chung et al., 2009; Kagawa-Singer & Pourat, 2000).

Acculturation, treatment-related decisions, and doctor-patient relationships also may be important factors that are influenced by culture (Lim et al., 2009). Level of acculturation, the psychosocial adjustment and adaptation to a new culture (Graves, 1967), is related to the usage of healthcare resources, health literacy, and HRQOL among Asian American subgroups (Kim et al., 2006; Lim et al., 2008; Noh & Kaspar, 2003). Several studies have reported that Korean and Vietnamese American breast cancer survivors expressed concern about their involvement in the treatment-related decision-making process because of lack of fluency and discomfort in speaking English (Ashing-Giwa et al., 2003; Blendon et al., 2008; Wu et al., 2005). In addition, Blendon et al. (2008) found that Chinese Americans perceived less sharing in the doctor-patient relationship and were less satisfied with the care they received than European Americans. Therefore, unique cultural experiences may have implications for the ways in which people perceive and adjust after cancer diagnosis. However, little evidence exists on how cultural health beliefs and related cultural factors are associated with health behaviors among Asian American breast cancer survivors (AABCS).

This study was guided by the Cultural Health Belief Model (Lim et al., 2009), a developing model that integrates the Health Belief Model (Janz & Becker, 1984) with a cultural context in the Contextual Model of HRQOL (Ashing-Giwa, 2005). As a theoretical model that seeks to explain health behaviors, the Health Belief Model posits that efforts to incorporate healthy behaviors are influenced by (a) an individual's perceived susceptibility to and severity of disease or illness, (b) perceived benefits and barriers for preventive action, (c) cues to action, and (d) perceived ability to perform the action required to control the disease or illness (Janz & Becker, 1984; Rosenstock, 1974). Based on that model, breast cancer survivors may take actions to promote their health based on their perceptions or beliefs and self-confidence in their ability to control the disease. However, the Health Belief Model does not consider the role of culture in health behavioral practices. Given that the Contextual Model of HRQOL focuses on cultural and socioecologic contexts (i.e., ethnicity, ethnic identity, acculturation, beliefs, and interconnectedness), the Cultural Health Belief Model can contribute to a greater understanding of health behavioral practices among ethnic minority populations.

The purpose of the current study was to investigate how cultural health beliefs, acculturation, treatment-

related decisions, and the doctor-patient relationship are associated with changes in health behaviors among AABCS. More specifically, the current study focused on identifying the contextual meaning of the relationships among the study variables for KABCS using a mixed-methods approach. As a result, this study aimed to provide evidence of the similarities and differences between Asian Americans and the specific ethnic group of Korean Americans.

## Methods

The current study followed the convergence model of a mixed-methods triangulation design (Creswell, 2009) to validate and confirm the quantitative results and qualitative findings. Generally, the model collects and analyzes quantitative and qualitative data on the same phenomenon separately and then converges the different results during the interpretation. Based on the procedure of the model, the current study used the quantitative methodology as the first step and the qualitative methodology as the second step. Then, the findings from the quantitative and qualitative methodologies were integrated during the final interpretation step to better understand the relationships among the study variables (called the *integrating phase*). This article presents the results of the integrating phase. For this mixed-methods approach, the two separate studies were conducted individually, and each data set remained analytically separate.

### Quantitative Phase

**Study design and participants:** The quantitative phase used secondary data from an HRQOL project for 703 multiethnic (European, African, Latina, and Asian American) breast cancer survivors living in California from 2001–2003. The current study used a population-based cross-sectional design (Ashing-Giwa, Padilla, Tejero, & Kim, 2004; Ashing-Giwa, Tejero, Kim, Padilla, & Hellemann, 2007) and focused on Asian American samples only. All participants were women who had been diagnosed with breast cancer, had survived for one to five years after diagnosis (cancer stage 0–III), and were cancer free at the time of study. Participants were recruited from the California Cancer Surveillance Program, hospital cancer registries, and community agencies and support groups. Eligible survivors participated in either a telephone or a mailed survey in their preferred language. Details regarding participant identification and recruitment procedures have been described elsewhere (Ashing-Giwa et al., 2004).

**Measures:** A culturally informed survey instrument consisting of standardized (i.e., cultural health beliefs, patient-doctor relationship, and acculturation) and new scales (i.e., health behavior and treatment-related decision) based on previous studies (Ashing-Giwa, 2000;

Ashing-Giwa, Ganz, & Petersen, 1999), qualitative data (Ashing-Giwa et al., 2004), and research literature was developed and validated (Ashing-Giwa et al., 2004). Table 1 presents measures used for each variable. In the current study, health behaviors were outcomes, whereas cultural health beliefs, acculturation, treatment-related decisions, and doctor-patient relationship were predictors. Several demographic (e.g., age, income, education, health insurance, language, employment status) and medical characteristics (e.g., cancer stage, years since diagnosis, cancer treatment, surgery) were used as control variables. Reliability and validity tests indicated that those measures were appropriate for Asian Americans ($\alpha$ = 0.79–0.89) (Ashing-Giwa et al., 2004; Kim et al., 2006).

**Statistical analysis:** Structural equation modeling (SEM) was used to test the relationships among the variables using AMOS™, version 19.0. First, the confirmatory factor analysis was conducted to assess the adequacy of the cultural health belief measure because the original measure had been changed to apply to diverse ethnic groups. Other indicators were used by unit-weighted observed composites to reduce the number of parameter estimations needed for a complex structural model. Next, the structural model was specified and tested to investigate the relationships among variables, and it emanated directly from the Cultural Health Belief Model and the previous findings (Lim et al., 2009). The full information maximum likelihood was used as the appropriate approach for the missing data because of the multivariate normal distribution and missing-at-random data. The study also used Bayesian estimation because it included categorical variables (Bryne & Watkins, 2003). Models were evaluated in three ways: goodness of fit indices (the chi-square statistic or discrepancy function, the root mean square error of approximation [RMSEA], and comparative fit indices), chi-square difference test, and significance test of all direct and indirect effects (Kline, 1998).

Based on the power analysis program (MacCallum, Browne, & Sugawara, 1996), the framework for the RMSEA was used to estimate the power of the SEM in the cur-

rent study. With alpha at 0.05, a null hypothesis RMSEA of 0.05, and an alternative hypothesis RMSEA of 0.1, degrees of freedom ranged from 120–130, and range of statistical power for a sample size of 206 was from 0.95–0.97. Therefore, the current sample size (N = 206) was sufficient for this study.

## Qualitative Phase

**Study design and participants:** An exploratory, descriptive, qualitative study was undertaken among KABCS using focus groups. Purposive sampling methods were used through community- and hospital-based support groups and hospital cancer registries in California. After identifying potential participants, initial eligibility screenings were performed via telephone by a trained bilingual research assistant. Individuals who were eligible and agreed to participate in the study were invited to attend a focus group at the community hospital

### Table 1. Measures of Outcomes and Predictors for Each Study Variable

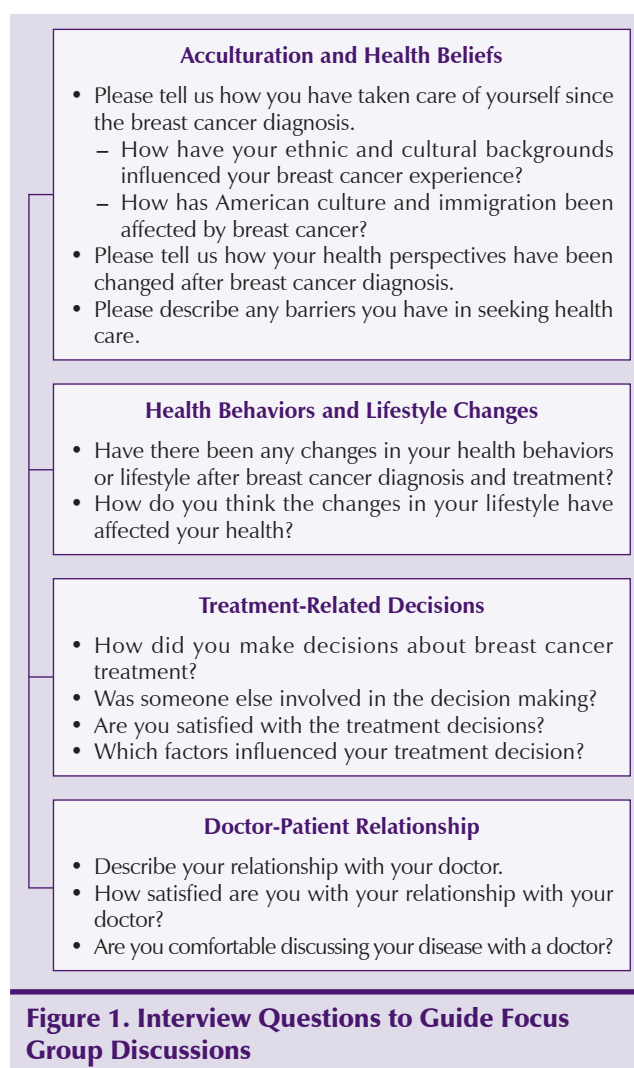| Variable | Measurements |
|---|---|
| Acculturation | Seven items from the Short Acculturation Scale for Hispanics (Marin et al., 1987)<br>Five-point Likert-type scale; higher scores indicate higher acculturation.<br>Computed by averaging all items<br>Validity of the scale for Asian Americans has been demonstrated (Cronbach $\alpha$ = 0.89) (Gupta & Yick, 2001). |
| Cultural health beliefs | Four items from the Multidimensional Health Locus of Control (Wallston et al., 1978) and two items from previous studies (Ashing-Giwa et al., 2004, 2007)<br>Two components: powerful others (three items: will of God, luck, and health professionals) and inter-intrapersonal factors (three items: anger, family situation, and cultural background)<br>Four-point Likert-type scale from 1 (strongly disagree) to 4 (strongly agree)<br>Computed by averaging items according to each component, with a higher score indicating stronger beliefs<br>Internal consistency of the scale has been established within the Asian American population (Cronbach $\alpha$ = 0.79) (Lim et al., 2009). |
| Demographic characteristics | Age, income, education, health insurance, language, and employment status |
| Doctor-patient relationship | Six of eight items from the interpersonal aspects of care subscale of the 38-item Adherence Determinants Questionnaire (e.g., listen carefully, answer all my questions, treat me in a very friendly manner) (DiMatteo et al., 1993)<br>Five-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree), with a higher score indicating a more positive relationship<br>Computed by summing all items (Cronbach $\alpha$ = 0.82) |
| Health behaviors | A self-report instrument that assesses health behavior changes<br>Participants are asked which health behavior changes they have made after cancer treatment.<br>Three items: diet, exercise, and stress management (Cronbach $\alpha$ = 0.8)<br>Yes or no response; a higher score indicates more positive or healthy behaviors. |
| Medical | Cancer stage, years since diagnosis, cancer treatment, and type of surgery |
| Treatment-related decisions | A self-report instrument that assesses who made the decision for the type of breast cancer treatment received (one item)<br>Responses were doctor (1); doctor and I (2); doctor and I, along with my partner (3); and I (4).<br>Yes or no response; a higher score indicates more positive responses. |

or center. The eligibility criteria for the focus group participants (e.g., cancer stage, years since diagnosis) were the same as those of the quantitative phase.

To conduct the focus groups, the investigators first developed a structured set of questions that were used to guide each group. After finalizing the questions, two focus groups were conducted in Korean by a facilitator of the same ethnic background in February 2009. Each group included five or six KABCS for a total of 11 participants. Although the current study did not have a large enough sample to reach theoretical saturation because of recruitment challenges (e.g., access to the target population, unwillingness to participate), the investigators could capture a significant portion of the perceptions that might be important in terms of the study topics. Informed consent was obtained from all participants before the start of each focus group, and all focus group discussions were tape recorded. Each participant received a $20 gift certificate. The primary topics of acculturation, cultural health beliefs, health behaviors, treatment-related decisions, and the doctor-patient relationship were discussed for about 90–120 minutes (see Figure 1). Probing questions also were used to elaborate important points raised. All study procedures were approved by the institutional review board at City of Hope National Medical Center.

**Data analysis:** All tape recordings were transcribed verbatim and verified by bilingual staff members through direct comparisons of the recordings and the transcripts. The transcripts then were translated into English and back-translated into Korean by two bilingual translators. The final translations were verified by investigators through direct comparisons of the English and Korean versions. To add methodologic rigor and reduce researcher bias, an independent analysis was performed by each of the investigators and a consensus was reached. During the preliminary qualitative analysis, open coding was managed using ATLAS.ti, version 6.2. The initial codes were grouped together under primary codes and were sorted into themes based on the topics.

### Mixed-Method Design Analysis

Following the convergence model of a mixed-methods triangulation design, significant pathways were confirmed with qualitative findings to provide insights into the meanings of the pathways for KABCS. First, each statistically significant ($p < 0.05$) pathway in the SEM model was sorted and organized into a matrix. Second, a subsequent content analysis was performed to explore the quantitative findings, including convergent findings and discrepancies, to seek qualitative explanations for KABCS. Third, qualitative data from the focus groups were reviewed to identify meaningful comments applicable to each pathway in the matrix. Finally, the information was condensed and organized according to pathway and compared with the results of other investigators to

**Acculturation and Health Beliefs**
- Please tell us how you have taken care of yourself since the breast cancer diagnosis.
  – How have your ethnic and cultural backgrounds influenced your breast cancer experience?
  – How has American culture and immigration been affected by breast cancer?
- Please tell us how your health perspectives have been changed after breast cancer diagnosis.
- Please describe any barriers you have in seeking health care.

**Health Behaviors and Lifestyle Changes**
- Have there been any changes in your health behaviors or lifestyle after breast cancer diagnosis and treatment?
- How do you think the changes in your lifestyle have affected your health?

**Treatment-Related Decisions**
- How did you make decisions about breast cancer treatment?
- Was someone else involved in the decision making?
- Are you satisfied with the treatment decisions?
- Which factors influenced your treatment decision?

**Doctor-Patient Relationship**
- Describe your relationship with your doctor.
- How satisfied are you with your relationship with your doctor?
- Are you comfortable discussing your disease with a doctor?

**Figure 1. Interview Questions to Guide Focus Group Discussions**

cross-check any emerging recurrent, converging, and contradictory findings (Dubois & Loiselle, 2009).

## Results

In the quantitative phase, a total of 206 Asian Americans (85 Chinese, 39 Filipino, 29 Korean, 26 Japanese, and 27 others) were included in the analysis. As shown in Tables 2 and 3, income, education, health insurance coverage, language, and acculturation showed significant differences between the Asian American and Korean American subgroups. Details regarding the sample characteristics have been reported elsewhere (Kim et al., 2006). In the qualitative phase, 11 KABCS participated in the focus groups. Differences in the quantitative and qualitative phases existed in health insurance coverage and cancer stage among KABCS.

### Quantitative Phase

An initial theory-implied model was specified, and the exploratory specification search procedure in AMOS was used to determine the best model for Asian Americans. In

the preliminary stage, the measurement model of cultural health beliefs was tested, and the two-factor model was selected: (a) powerful others (i.e., will of God, luck, and health professionals) and (b) inter-intrapersonal health beliefs (i.e., beliefs that individual, familial, and cultural backgrounds affect one's own health). The final structural model demonstrated that it is a reasonable representation of the structure of the data with good fit indices, $\chi^2(122) = 152.5$, comparative fit indices = 0.91, RMSEA = 0.04. Most of the factor loadings and path coefficients were statistically significant ($p < 0.05$). The quantitative model is available from the authors by request.

## Table 2. Demographic and Medical Characteristics for Participants

| | Survey | | | | | Focus Group | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Asian Americans (N = 177) | | Korean Americans (N = 29) | | | Korean Americans (N = 11) | | Versus Asian[a] | Versus Korean[a] |
| Characteristic | $\overline{X}$ | SD | $\overline{X}$ | SD | t | $\overline{X}$ | SD | t | t |
| Age (years) | 54.3 | 11.4 | 52.8 | 8.8 | 0.82 | 53.8 | 8.9 | 0.13 | −0.34 |
| Years since diagnosis | 3 | 1.5 | 2.6 | 1.4 | 1.17 | 2.3 | 1 | 1.56 | 0.77 |
| Characteristic | n | % | n | % | $\chi^2$ | n | % | $\chi^2$ | $\chi^2$ |
| **Income ($)** | | | | | 14.7** | – | – | – | – |
| 25,000 or lower | 37 | 21 | 14 | 48 | | – | – | | |
| 25,001–45,000 | 33 | 19 | 8 | 28 | | – | – | | |
| 45,001–75,000 | 47 | 27 | 4 | 14 | | – | – | | |
| 75,001 or higher | 60 | 34 | 3 | 10 | | – | – | | |
| **Education** | | | | | 23.45*** | | | 4.71 | 0.68 |
| Less than high school | 7 | 4 | 2 | 7 | | 1 | 9 | | |
| High school graduate | 16 | 9 | 12 | 41 | | 3 | 27 | | |
| More than high school | 154 | 87 | 15 | 52 | | 7 | 64 | | |
| **Health insurance** | | | | | 38.23*** | | | 72.12*** | 10.18** |
| No insurance | 8 | 5 | 8 | 28 | | 2 | 18 | | |
| Public (Medicare or Medicaid) | 10 | 6 | 8 | 28 | | 9 | 82 | | |
| Private | 157 | 89 | 12 | 40 | | – | – | | |
| Missing | 2 | 1 | 1 | 3 | | – | – | | |
| **Employed** | | | | | 3.46 | | | 5.06* | 1.01 |
| Yes | 94 | 53 | 10 | 35 | | 3 | 38 | | |
| No | 83 | 47 | 19 | 66 | | 8 | 73 | | |
| **Language** | | | | | 4.69* | | | 27.54*** | 3.22 |
| English | 132 | 75 | 7 | 24 | | – | – | | |
| Native (e.g., Chinese, Korean) | 45 | 25 | 22 | 76 | | 11 | 100 | | |
| **Cancer stage** | | | | | 4.72 | | | 8.38* | 7.28* |
| 0 | 29 | 16 | 8 | 28 | | – | – | | |
| I | 69 | 39 | 11 | 38 | | 2 | 18 | | |
| II | 64 | 36 | 6 | 21 | | 6 | 55 | | |
| III | 13 | 7 | 4 | 14 | | 3 | 27 | | |
| Missing | 2 | 1 | – | – | | – | – | | |
| **Type of surgery[b]** | | | | | | | | | |
| Lumpectomy | 92 | 52 | 13 | 45 | 0.1 | 2 | 18 | 4.73 | 4.41 |
| Mastectomy | 75 | 42 | 14 | 48 | 0.35 | 8 | 73 | 3.87 | 1.93 |
| Mastectomy plus reconstruction | 31 | 18 | 2 | 7 | 2.29 | – | – | 2.31 | 0.8 |
| **Cancer treatment[b]** | | | | | | | | | |
| Chemotherapy | 96 | 54 | 13 | 45 | 0.89 | 6 | 55 | 0 | 0.3 |
| Radiation therapy | 114 | 64 | 16 | 55 | 0.99 | 5 | 46 | 1.67 | 0.3 |
| Hormonal therapy | 110 | 62 | 13 | 45 | 3.38 | 3 | 27 | 5.37 | 1.02 |

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

[a] Characteristics of Korean American focus group participants were compared to those of Asian American survey respondents (versus Asian) and Korean American survey respondents (versus Korean).

[b] Participants could select multiple responses, and not all participants had received these treatments.

*Note.* Because of rounding, not all percentages total 100.

## Mixed Results From Quantitative and Qualitative Phases

Pathways that emerged as significant (p < 0.05) during the quantitative phase were included in the integrating phase (see Figure 2). The contextual meanings of each pathway were described based on focus-group findings. Relationships among main research variables follow.

**Acculturation and inter-intrapersonal health beliefs:** The quantitative analysis demonstrated that more acculturated Asian Americans were less likely than less-acculturated women to hold health beliefs associated with an inter-intrapersonal factor ($\beta$ = –0.205). Based on that pathway, three themes for KABCS were derived: gender role, acculturative stress, and emotional challenges.

Several KABCS described adherence to a prescribed gender role for Korean women in the traditional Korean culture, which may be associated with inter-intrapersonal health beliefs. KABCS, particularly those who were not acculturated in the United States, hold inter-intrapersonal health beliefs and harbor anger. The lack of expression of their experiences and feelings can make those women more vulnerable to cancer.

> Until now, I have been devoted to my family and have dedicated myself to them wholeheartedly. I just tolerate everything as many Korean women do. . . . Sometimes, I wanted them to show some interest in me, but I did not discuss such feelings. . . . Maybe it caused breast cancer.

Issues and concerns representative of acculturative stress were a common theme among KABCS. In general, such challenges resulted in a chronic or pervasive adjustment process because of cultural or language barriers and different healthcare systems. In addition, cultural or language barriers might cause feelings of frustration and ultimately influence their belief that negative emotional feelings can make a person vulnerable to cancer.

> In the beginning, I felt stressed due to the language problem. From the smallest to the biggest issues, if one cannot speak English, it can be frustrating. The frustration just builds and builds. So I wonder if I would not have gotten cancer if I had stayed in Korea.

Many KABCS also expressed emotional challenges arising from the unfamiliar and different environment and culture of American life. One woman stated, "Americans don't seem to share their emotions with immigrants like us. They don't try to talk to us first."

### Table 3. Outcomes and Predictors in the Quantitative Phase

| Variable | Asian Americans (N = 177) | | Korean Americans (N = 29) | | |
|---|---|---|---|---|---|
| | $\overline{X}$ | SD | $\overline{X}$ | SD | t |
| **Cultural health beliefs[a]** | | | | | |
| Powerful others | 2.2 | 0.6 | 2.29 | 0.6 | –0.83 |
| Inter-intrapersonal factors | 2.81 | 0.6 | 3.05 | 0.5 | –1.2 |
| **Acculturation[b]** | 2.58 | 0.8 | 1.88 | 0.6 | 5.23* |
| **Doctor-patient relationship[c]** | 25.46 | 3.7 | 25.1 | 4.4 | 0.55 |
| **Variable** | **n** | **%** | **n** | **%** | **$\chi^2$** |
| **Treatment decisions** | | | | | |
| Doctor decided | 27 | 15 | 7 | 24 | 1.22 |
| Doctor and patient decided | 55 | 31 | 7 | 24 | 2.8 |
| Doctor, patient, and partner decided | 64 | 36 | 6 | 21 | 2.58 |
| Patient decided | 19 | 11 | 5 | 17 | 0.86 |
| Other (not included in analysis) | 12 | 7 | 4 | 14 | – |
| **Health behaviors[d]** | | | | | |
| Exercise | 99 | 56 | 13 | 45 | 0.07 |
| Eating | 105 | 59 | 19 | 66 | 0.4 |
| Stress management | 87 | 49 | 18 | 62 | 1.66 |

\* p < 0.001

[a] Rated on a Likert-type scale from 1–4; higher scores indicate stronger beliefs.

[b] Scores were the average of seven items rated on a Likert-type scale from 1–5; higher scores indicate stronger acculturation.

[c] Scores were a sum of six items rated on a Likert-type scale from 1–5; higher scores indicate a more positive relationship.

[d] Participants could select more than one response.

**Powerful others and the doctor-patient relationship:** The quantitative analysis showed that AABCS who held the health beliefs of powerful others were less likely to report a positive doctor-patient relationship ($\beta$ = –0.182). However, findings from the Korean American focus group showed different patterns, revealing two themes: trust in the doctor and the power of God in treatment.

The belief that "health professionals control my health" may influence KABCS's maintenance of a good relationship with the doctor. A KABCS stated, "I left it up to my doctor. That is just my principle. Trust . . . of course, the doctor also gave me confidence, and we communicated very well." This demonstrated the strong link between trust in the doctor and a good doctor-patient relationship.

Several KABCS mentioned the power of God in their cancer treatment, indicating that God let them make positive changes in their attitudes regarding cancer treatment and their relationships with their doctors. One stated,

> My mind is at ease. Even the day before surgery, I was not afraid. I felt that everything would go well if I left it up to God. . . . It also influenced my feelings about the doctor. I came to trust my doctor.

**Inter-intrapersonal health-related beliefs and stress management:** The quantitative analysis demonstrated that AABCS who held inter-intrapersonal health beliefs

were more likely to use stress management skills (β = 0.23). Based on that pathway, four themes were derived: change in appraisal and attitude; enjoyment seeking; family support; and functional strain from family, children, and job. First, many KABCS stated that a relationship exists between personality (e.g., sensitivity, perfectionist) and cancer diagnosis, suggesting that patients need to accept stressful situations humbly and enjoy their present life without thinking negatively: "I think positive thoughts are the best. No matter how difficult the situation is, 'It will turn out okay.'"

Similarly, more active solutions related to stress management have been suggested, such as "enjoyment seeking." Several women stated that enjoyment-seeking activities, such as singing, volunteering, and meeting with friends, are good strategies for dealing with their own stress: "Religious faith and singing help. . . . Finding hymns, practicing, and singing, those help me a lot." KABCS also expressed the importance of family support. That might be caused by the belief that the family situation influences whether they become sick or stay healthy.

> If I'm about to get angry, my husband says this to me, "Since you were ill and you are all better now, let's overcome your anger." . . . For one year, he supported me and was very good to me. So I changed a lot.

In addition to such positive changes, some women believed that family, children, and employment produced a lot of stress and ultimately caused breast cancer.

> Worrying about children and rides . . . the issues that arise in school . . . I got a lot of stress from the children's problems and an overworked life.

**Doctor-patient relationship and eating:** The quantitative study found that AABCS who had a good relationship with their doctor were more likely to have a healthy diet pattern (β = 0.172). Two themes were found in the focus groups: power of the doctor's recommendations and following the doctor's recommendations.

Although Asian American women are skeptical of the effectiveness of Western health procedures, KABCS expressed the power of the doctor's recommendations: "I did it, whatever the doctor recommended, even the recommended eating patterns." Several KABCS also mentioned that they were following their doctor's recom-

mendations regarding diet in addition to receiving cancer treatment and medication. Generally, such behavior patterns resulted from a good relationship with the doctor.

> I have been careful with foods and to follow my doctor's recommendations after cancer treatment. I am eating very healthy foods and don't eat meat.

**Doctor-patient relationship and stress management:** In the quantitative analysis, the doctor-patient relationship showed a positive relationship with stress management (β = 0.17). The relationship with the doctor can be a major issue for patients with cancer, and that relationship may either cause or help resolve stress. Four themes were derived from the focus groups: the doctor's attitude and communication style, obtaining information from the doctor, emotional relief from the relationship with the doctor, and following the doctor's recommendations.

In the relationship with the doctor, many KABCS mentioned trust, confidence, and the attitudes of doctors. Specifically, the doctor's attitudes and communication seemed to significantly influence KABCS's level of stress.

> "If you receive this, you will die today. Do you want to die today?" . . . How could a doctor speak this way to a cancer patient? I got so stressed.

A woman complained she did not obtain enough medical information because of an uncomfortable relationship with her doctor, the language barrier, and limited time.

> I had a few consultation sessions with a doctor before surgery. . . . It was a little regretful because I did not get any detailed information.

The relationship with the doctor may cause emotional strain during treatment and recovery. Therefore, emotional relief from the relationship with the doctor may
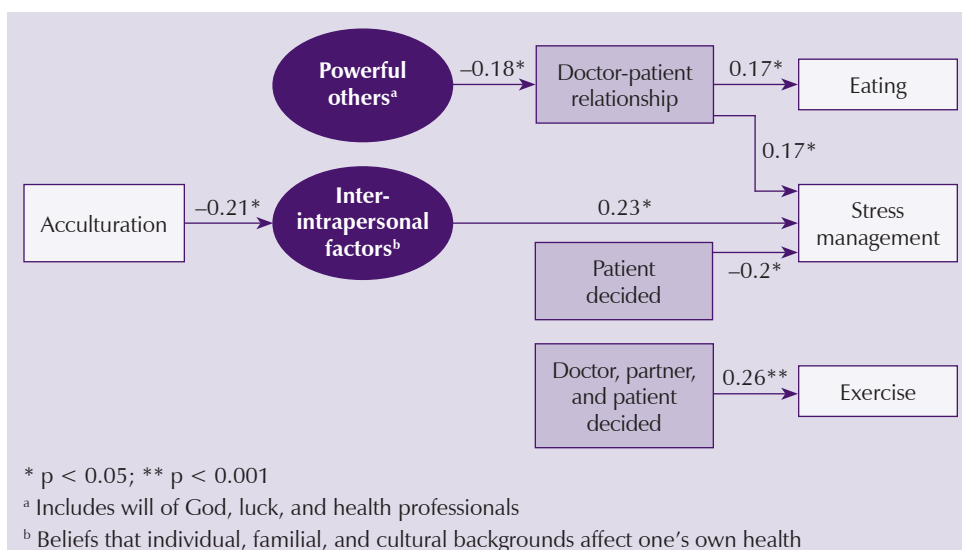


* p < 0.05; ** p < 0.001
[a] Includes will of God, luck, and health professionals
[b] Beliefs that individual, familial, and cultural backgrounds affect one's own health

**Figure 2. Structural Model of Health Behaviors Among Asian American Breast Cancer Survivors in the Integrating Phase**

contribute to a reduced stress level for both the patient and his or her family members.

> Eventually [her daughter] said, "Mom, as I have gotten to know the doctor, I've found that he is kind," and I was a little relieved, and I was pleased.

A doctor who maintains a good relationship with his or her patient can directly suggest strategies to reduce stress levels because of the comfortable communication between the doctor and the patient: "My doctor said that my work was too stressful, so quit immediately. . . . So I came to quit my work."

**Making decisions alone and stress management:** The quantitative analysis demonstrated that Asian Americans who made decisions by themselves were less likely to use stress management skills ($\beta = -0.197$). Two themes were found in the focus groups: regret related to decision making and decision-making authority.

One woman mentioned that she regretted not making a decision in terms of surgery. KABCS tended to hesitate in decisions about breast cancer reconstruction surgery because of their image as mothers or wives rather than their image as women. Family members may need to communicate with patients and try to understand their emotions and choices.

> The doctor said to do reconstruction surgery. . . . My son asked a doctor in Korea. But the doctor said that if it were his mother, he would not recommend it. . . . So my son didn't want me to do it. So I didn't do it. . . . Now, I have regrets that I didn't make that decision.

Decision-making authority was another theme. Several women mentioned that the patient needed to have authority during the decision-making process.

> The patient has to make the decision. Is it not the patient's own decision? . . . So, I made my own decisions. I listened to their words and everything.

**Making decisions with doctor and partner and exercise:** In the SEM analysis, decision making was positively associated with exercise, indicating that women whose family members are actively involved in the process of making decisions about treatment were more likely to engage in exercise ($\beta = 0.26$). Based on that pathway, a common theme was family health and self-efficacy. Therefore, if the family and patient actively participate in the shared decision-making process, the patient may be more active in her own self-care as an attempt to improve her condition.

> The doctor said, "Your mom has gotten much better. She will continue to get better if she exercises a lot." And my daughter said, "Mom, you will have to try exercising." . . . I was very pleased to decide this together.

## Discussion

This study investigated relationships between factors that influence health behaviors in AABCS and identified the contextual meaning within each pathway for KABCS. During the quantitative phase, significant relationships were found among cultural health beliefs, acculturation, treatment-related decisions, the doctor-patient relationship, and the health behaviors of AABCS. Subsequently, focus groups with KABCS revealed diverse themes according to each pathway derived from the SEM. To the authors' knowledge, this is the first study to seek comprehensive knowledge of cultural health beliefs and behaviors with the convergence model with a mixed-methods triangulation design. Specifically, this approach is appropriate in cancer survivorship research related to ethnic minority populations, considering that general quantitative findings were elaborated and confirmed with qualitative findings specific to ethnic subgroups.

The current study addressed both AABCS and KABCS using quantitative and qualitative methods, respectively. Although a true mixed-methods approach would use identical inclusion and exclusion criteria for the population of interest for the follow-up qualitative study, the current study has important reasons for addressing Asian American subgroups. To date, most studies have presented an aggregated outcome for Asian Americans, although great heterogeneity exists regarding language, religion, lifestyle, and culture within Asian American subgroups (Browne & Broderick, 1994). In reality, challenges exist in recruiting Asian American subgroups because of differences in language and access to the target population; such challenges may make it difficult to approach a specific ethnic group via advanced statistical methods, which generally require large sample sizes. To overcome such limitations, the current study employed a mixed-methods triangulation design. That is, the results from the quantitative phase provided the entire description of Asian Americans, whereas the contextual meaning of each pathway for Korean Americans can be obtained from the qualitative findings. Therefore, the investigators sought to compare and confirm quantitative results for AABCS with qualitative findings from KABCS, expecting well-substantiated conclusions about a single phenomenon (Creswell & Plano Clark, 2007). At the same time, the investigators expected that the current study would provide further information about whether the aggregation of Asian Americans can lead to bias of the results.

Inclusion of KABCS during the qualitative phase demonstrated whether they differed from other Asian Americans for each relationship. For example, the KABCS focus groups did not support the existence of a negative pathway from powerful others to the doctor-patient relationship. That result may suggest KABCS have a different pattern of association in the doctor-patient

relationship compared with the cultural health beliefs of other Asian Americans. In addition, it may reflect Korean Americans' unique cultural contexts, which cannot be generalized to other Asian Americans. Therefore, the different results between quantitative and qualitative studies can provide additional knowledge and insight regarding Asian American subgroups.

In the qualitative phase, KABCS emphasized the importance of stress management, frequently stating that they are seeking ways to reduce their stress. Findings that several predictors (e.g., inter-intrapersonal factors, doctor-patient relationship, treatment-related decisions) were associated with stress management in the quantitative phase may be consistent with qualitative results from KABCS. However, many KABCS expressed that a variety of sources of stress emerged during the process of adapting to a new environment (i.e., immigration or acculturative stress). However, the quantitative findings did not demonstrate the relationship between acculturation and stress management; that may reflect distinct cultural beliefs and practices among KABCS compared to other AABCS. Korean Americans predominantly are first-generation immigrants who are monolingual and tend to maintain their cultural beliefs and attitudes (Barnes & Bennett, 2002). The sociocultural context of Korean Americans may lead to acculturative stress. Future studies are needed to investigate the effect of acculturation on stress with a large number of KABCS.

Unlike stress management, eating and exercise did not show a significant relationship with cultural health beliefs among AABCS in the SEM analysis; that is not consistent with a previous study (Rabin & Pinto, 2006). In the preliminary analysis of the focus groups, many participants stated that "less meat, more vegetables and fruits, and more exercise" is a motto of cancer survivors. The finding indicated that breast cancer survivors may recognize that making positive changes in eating and exercise habits is necessary to improve their health outcomes and to prevent secondary cancer or other diseases, regardless of their health beliefs.

Cultural health beliefs also were used to understand health behavior practices among Asian Americans. Specifically, the KABCS focus groups were helpful for identifying diverse beliefs regarding cancer. Beyond the cultural context, KABCS's gender role, family support, and trust or beliefs about God were their primary belief systems. The beliefs also helped to explain those patients' health behavioral practices and their relationships with their doctors. Given that cultural perception and experiences with cancer vary among Asian American subgroups, additional knowledge about ethnic subgroups from the qualitative phase is essential for understanding their belief systems based on unique cultural contexts.

In addition, the findings suggest that a good relationship with the doctor and the treatment-related decision-making process may influence or promote positive changes in the health behaviors of breast cancer survivors. Many KABCS stated the importance of trust and communication with their doctor during cancer treatment and follow-up care. The current study demonstrates the important role of health professionals for KABCS. Efforts to form positive relationships and communicate with breast cancer survivors, family members, and health professionals can contribute to the promotion of healthy behaviors for breast cancer survivors and ultimately improve their HRQOL (Fukui, Ogawa, & Yamaqishi, 2011; Kerr, Engel, Schlesinger-Raab, Sauer, & Holzel, 2003).

### Limitations

The current study had several limitations. First, self-reported data obtained during the quantitative phase were subject to recall bias. Second, the findings may not be generalizable to all AABCS and KABCS. Specifically, the sample sizes of KABCS in the quantitative and qualitative phases were relatively small. The investigators did not have a large enough sample to reach saturation among KABCS because of the recruitment challenges, particularly in the qualitative phase. Finally, the quantitative phase presented an aggregated outcome for Asian Americans, rather than focusing on Korean Americans, because of sample size; therefore, the mixed-methods approach may not capture the complete meaning.

## Implications for Nursing

The current study has clinical and academic implications. First, the finding that cultural health beliefs are associated with health behaviors draws attention to the need for practitioners to better understand the cultural contexts of breast cancer survivors to promote healthy behaviors. The current findings on the positive association of the doctor-patient relationship with health behaviors imply a critical role and responsibility of health professionals in cancer survivors' symptom management and self-care practices. Health professionals should develop a fuller appreciation for the perspectives of cancer survivors and the determinants of healthy behaviors. Academically, the findings of the current study support the importance of a mixed-methods approach to better understand quantitative results with qualitative findings. Specifically, a mixed-methods approach for ethnic minority populations can be meaningful by providing contextual meaning beyond the quantitative findings. Those findings further highlight the need for a disaggregated approach to Asian American populations. Future efforts to further understand the cultural contexts of Asian Americans and Asian American subgroups should be accompanied with population-based, methodologically strong approaches.

# Conclusions

The current study provided new knowledge about cultural health beliefs and health behaviors among KABCS using a mixed-methods approach. Specifically, the investigators identified contextual meanings that were not found through quantitative methods alone. Understanding the contextual meanings that may promote the initiation of healthy behaviors among breast cancer survivors is a necessary step toward developing culturally tailored interventions for ethnic minority populations.

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