

**Effects of Perceived Discrimination and Trust on
Breast Cancer Screening
among Korean American Women**

BY

HYE CHONG HONG
B.S.N., University of Illinois at Chicago, 1992
M.S.N., Yonsei University, 2010

THESIS

Submitted as partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Nursing Sciences
in the Graduate College of the
University of Illinois at Chicago, 2017

Chicago, Illinois

Defense Committee:

Eileen Collins, Chair and Advisor
Carol J. Ferrans
Chang Gi Park
Lauretta T. Quinn
Hyeonkyeong Lee, Yonsei University

This Thesis is dedicated to my husband, (Nam Kim), and my son, (Ian Kim), without whom it would never have been accomplished.

ACKNOWLEDGEMENTS

I would like to express sincere gratitude to Dr. Eileen Collins, my academic advisor and research chair, who has supported me and guided me throughout my dissertation. Her extensive experience and knowledge provided me with an excellent guide to plan, implement, and complete my dissertation study. I was greatly emboldened by her words of encouragement when I was uncertain about my ability to complete this research. Without her, this dissertation would not have been completed. I am grateful to Dr. Chang Gi Park, who led me to the PhD program. He was always available when I needed support in data analysis and interpretation as well as when I needed any advice throughout the PhD program. I would also like to thank Dr. Hyeonkyeong Lee, who has been my mentor since the master's program, for insightful comments and for motivating me to be a good nursing scholar. I extend heartfelt gratitude to Dr. Carol Ferrans and Dr. Laretta Quinn for their constructive comments and helpful suggestions. Their expertise in my research topic and critical comments really guided my conceptual framework and questionnaire. I really appreciate Dr. Ferrans for letting me use her instrument. Thank you.

I am heartily thankful to my families who always supported me. Thanks to my father and mother in law, my mother, my sister, my husband, and my beloved son. Love you always.

TABLE OF CONTENTS

| <u>CHAPTER</u> | <u>PAGE</u> |
|--|-------------|
| I. INTRODUCTION | 1 |
| A. Background..... | 1 |
| 1. Korean Americans..... | 2 |
| 2. Breast cancer incidence, prevalence, mortality rate among KA women..... | 2 |
| 3. Risk factors | 3 |
| 4. Breast cancer screening | 3 |
| 5. Breast cancer screening predictors among KAs | 4 |
| 6. Perceived discrimination in healthcare | 5 |
| 7. Trust in healthcare providers and healthcare system | 6 |
| B. Significance of the study..... | 7 |
| C. Specific aims | 8 |
| II. CONCEPTUAL FRAMEWORK AND RELATED LITERATURE | 9 |
| A. Conceptual Framework..... | 9 |
| B. Literature Review | 13 |
| 1. Socio-demographics, health, and breast cancer screening..... | 13 |
| 2. Health care access and breast cancer screening..... | 13 |
| 3. Acculturation and breast cancer screening | 14 |
| 4. Cultural beliefs and breast cancer screening | 14 |
| 5. Perceived discrimination and breast cancer screening | 15 |
| 6. Predictors of trust | 16 |
| 7. Trust in healthcare providers and breast cancer screening | 17 |
| 8. Trust in healthcare system and breast cancer screening..... | 18 |
| III. METHODOLOGY | 19 |
| A. Research design | 19 |
| B. Sample | 19 |
| 1. Selection criteria | 19 |
| 2. Power analysis | 19 |
| C. Recruitment and Enrollment | 20 |
| D. Data Collection | 20 |
| E. Instrumentation | 21 |
| 1. Dependent variables..... | 21 |
| 2. Independent variables | 21 |
| a. Acculturation..... | 21 |
| b. Ferrans Cultural Beliefs Scale..... | 22 |
| c. Perceived discrimination in healthcare | 22 |
| d. Trust in healthcare providers..... | 23 |
| e. Trust in healthcare system..... | 24 |
| 3. Background variables | 24 |
| F. Translation process | 24 |
| G. Data Analysis | 25 |

TABLE OF CONTENTS (continued)

| <u>CHAPTER</u> | <u>PAGE</u> |
|---|-------------|
| IV. RESULTS | 32 |
| A. Section I..... | 32 |
| 1. Descriptive analysis of demographic and participant characteristics | 32 |
| 2. Bivariate analysis of demographic and participant characteristics with breast cancer screening | 34 |
| B. Section II..... | 38 |
| 1. Levels of breast cancer screening rate, acculturation, cultural beliefs, perceived discrimination in healthcare, trust in healthcare providers, and trust in healthcare system | 38 |
| a. Ever screened.... | 39 |
| b. Screened in past 2 years..... | 39 |
| 2. Predictors of breast cancer screening (mammography) | 40 |
| a. Ever screened.... | 41 |
| b. Screened in past 2 years..... | 41 |
| c. Firth logistic regression..... | 42 |
| 3. Indirect effect of perceived discrimination, cultural beliefs, and acculturation on mammography through trust | 47 |
| a. Ever screened.... | 47 |
| b. Screened in past 2 years..... | 47 |
| V. DISCUSSION | 55 |
| A. Breast screening rate..... | 55 |
| B. Levels of acculturation, cultural beliefs, perceived discrimination in healthcare, trust in healthcare providers, and trust in the healthcare system..... | 57 |
| 1. Acculturation | 57 |
| 2. Cultural beliefs | 57 |
| 3. Perceived discrimination in healthcare | 58 |
| 4. Trust in healthcare providers | 58 |
| 5. Trust in healthcare system | 59 |
| C. Predictors of breast cancer screening..... | 59 |
| 1. Ever screening | 59 |
| 2. Screened in past 2 years | 60 |
| D. The mediating effect of trust in healthcare providers and trust in healthcare system | 62 |
| E. Strengths and Limitations | 64 |
| F. Implications | 65 |
| G. Conclusion | 68 |
| APPENDICES | 69 |
| Appendix A..... | 70 |
| Appendix B..... | 73 |
| Appendix C..... | 74 |
| Appendix D..... | 82 |
| Appendix E..... | 84 |
| Appendix F..... | 91 |
| CITED LITERATURE..... | 113 |
| VITA | 130 |

LIST OF TABLES

| <u>TABLE</u> | <u>PAGE</u> |
|---|-------------|
| I. BETANCOURT’S INTEGRATIVE MODEL, CONCEPTUAL DEFINISION, AND RELATED LITERATURE VARIABLE..... | 11 |
| II. ACCULTURATION SCALE..... | 27 |
| III. FERRANS CULTURAL BELIEFS SCALE | 28 |
| IV. PERCEIVED DISCRIMINATION IN HELATHCARE SCALE | 29 |
| V. TRUST IN HEALTHCARE PROVIDERS SCALE..... | 30 |
| VI. TRUST IN HEALTHCARE SYSTEM SCALE | 31 |
| VII. DESCRIPTIVE STATISTICS OF TOTAL SAMPLE | 33 |
| VIII. DESCRIPTIVE STATISTICS (SCREENED VS NOT SCREENED)..... | 35 |
| IX. REASONS FOR NOT GETTING A MAMMOGRAM DONE IN PAST 2 YEARS..... | 38 |
| X. DESCRIPTIVE STATISTICS (GROUP DIFFERENCES)..... | 40 |
| XI. MULTIPLE LOGISTIC REGRESSION PREDICTING EVER SCREENING AND PAST 2 YEARS | 43 |
| XII. FIRTH LOGISTIC REGRESSION PREDICTING EVER SCREENING AND PAST 2 YEARS..... | 45 |

LIST OF FIGURES

| <u>FIGURE</u> | <u>PAGE</u> |
|--|-------------|
| 1. Conceptual framework for this study | 12 |
| 2. The mediating effect of trust in healthcare providers and distrust in healthcare system between perceived discrimination and ever screened | 49 |
| 3. The mediating effect of trust in healthcare providers between perceived discrimination and ever screened | 49 |
| 4. The mediating effect of distrust in healthcare system between perceived discrimination and ever screened | 49 |
| 5. The mediating effect of trust in healthcare providers and distrust in healthcare system between cultural beliefs and ever screened | 50 |
| 6. The mediating effect of trust in healthcare providers between cultural beliefs and ever screened | 50 |
| 7. The mediating effect of distrust in healthcare system between cultural beliefs and ever screened | 50 |
| 8. The mediating effect of trust in healthcare providers and distrust in healthcare system between acculturation and ever screened | 51 |
| 9. The mediating effect of trust in healthcare providers between acculturation and ever screened | 51 |
| 10. The mediating effect of distrust in healthcare system between acculturation and ever screened | 51 |
| 11. The mediating effect of trust in healthcare providers and distrust in healthcare system between perceived discrimination and screening in 2 years | 52 |
| 12. The mediating effect of trust in healthcare providers between perceived discrimination and screening in 2 years | 52 |
| 13. The mediating effect of distrust in healthcare system between perceived discrimination and screening in 2 years | 52 |
| 14. The mediating effect of trust in healthcare providers and distrust in healthcare system between cultural beliefs and screening in 2 years | 53 |
| 15. The mediating effect of trust in healthcare providers between cultural beliefs and screening in 2 years | 53 |
| 16. The mediating effect of distrust in healthcare system between cultural beliefs and screening in 2 years | 53 |

LIST OF FIGURES (continued)

| <u>FIGURE</u> | | <u>PAGE</u> |
|---------------|--|-------------|
| 17. | The mediating effect of trust in healthcare providers and distrust in healthcare system between acculturation and screening in 2 years | 54 |
| 18. | The mediating effect of trust in healthcare providers between acculturation and screening in 2 years | 54 |
| 19. | The mediating effect of distrust in healthcare system between acculturation and screening in 2 years | 54 |

LIST OF ABBREVIATIONS

| | |
|----------|---|
| ACS | American Cancer Society |
| APIAHF | Asian Pacific Islander American Health Forum |
| CDC | Center for Disease Control and Prevention |
| CI | Confidence Interval |
| CITI | Collaborative Institutional Training Initiative |
| HCSD | A Revised Health Care System Distrust |
| HIPAA | Health Insurance Portability and Accountability Act |
| IOM | the Institute of Medicine |
| IRB | the Institutional Review Board |
| KA | Korean American |
| OR | Odd Ratio |
| Pap Test | Papanicolau Test |
| PI | Principal Investigator |
| SASH | A Short Acculturation Scale for Hispanics |
| SAS-K | A Short Acculturation Scale for Koreans |
| SEER | Surveillance, Epidemiology, End Results |
| SES | Social Economic Status |
| SPSS | Statistical Package for the Social Sciences |
| SRH | Self-Rated Health |
| TIP | The Trust in Physician |
| US | United States |
| USPSTF | U.S. Preventive Services Task Force |

SUMMARY

Korean American women continue to have a higher breast cancer prevalence rate, lower breast cancer screening rates, and lower survival rates due to diagnosis at later stage of breast cancer than other racial groups. Perceived discrimination, trust based patient-provider interaction and their influence on breast cancer screening have been identified as critical factors in other populations and may be able to explain some of the low utilization of breast cancer screening among Korean American women. Thus, the purpose of this study was to identify factors that influence breast cancer screening adherence among Korean American women including perceived discrimination in healthcare, trust in healthcare providers, and trust in healthcare system.

A cross-sectional survey design was used to examine the factors contributing to breast cancer screening adherence among 196 Korean American women aged between 50 to 74 years. Participants were recruited from four Korean Churches in Chicago and the metropolitan area. Measures were aligned with the Betancourt's Integrative Model of Culture, Psychological Processes, and Behavior adapted for health behavior and Social Stress Theory. Measures included a Short Acculturation Scale for Koreans (SAS-K), The Perceived Discrimination in Healthcare, Trust in Physician, A Revised Healthcare System Distrust, and The Ferrans Cultural Belief Scales. Data were analyzed using multiple logistic regression, Firth logistic regression, and bootstrapping using PROCESS.

The majority of participants reported ever having a mammogram (85%), but reports of having a mammogram in past 2 years were low (54%). Predictors of ever having a mammogram were whether they were US citizens or not and higher trust in healthcare providers. Predictors of screened in past 2 years were knowing where to go for mammograms, having a regular doctor or usual place for healthcare, higher trust in healthcare providers, and lower distrust in healthcare system. In addition, perceived discrimination and cultural beliefs had an indirect effect on breast cancer screening in past 2 years through trust in healthcare providers and distrust in healthcare system.

Study findings suggest the need for efforts to increase trust in healthcare providers and trust in healthcare system to enhance breast cancer screening adherence among Korean American women. The

findings of this study would lay the foundation for future work to understand breast cancer screening adherence among Korean American women and to develop the education programs for Korean American women and healthcare providers.

I. INTRODUCTION

A. Background

Stage at diagnosis is a critically important determinant of health outcomes and survival rate in breast cancer. The risk of mortality and health complications for breast cancer patients is strongly related to stage at diagnosis (Wang, McLafferty, Escamilla, & Luo, 2008). Among breast cancer survivors, patients with early diagnosed breast cancer have fewer complications and have significantly higher rates of survival than whose breast cancer is diagnosed late (Gonzales, Harding, Lambert, Fu, & Henderson, 2013). For breast cancer, regular mammography is the only known effective method to detect breast cancer (Siu & U.S. Preventive Services Task Force [USPSTF], 2016).

Korean American (KA) women have a lower breast cancer screening rate, higher breast cancer prevalence, and lower survival rates due to diagnosis at late stage disease than other racial groups (Anderson, Jun, & Choi, 2007; Lee et al., 2012). Previously, studies were conducted to identify factors influencing mammography use among KA women such as socio-demographic, acculturation, health care access, and health beliefs (e.g. perceived susceptibility, barriers, severity, benefits). However, the findings are inconsistent and do not entirely explain why KA women underuse cancer screening services.

There is a growing body of literature that patient's perceptions of the patient-provider interaction, perceived discrimination and trust are associated with cancer screening in the general population and minorities. For example, perceived discrimination has been related to lower healthcare utilization, poorer health (Kressin, Raymond, & Manze, 2008; Shavers et al., 2012) and lower cancer screening (Gonzales et al., 2013; Hausmann, Jeong, Bost, & Ibrahim, 2008) in the general and minority populations. Trust in healthcare providers and healthcare systems can also affect cancer screening. For example, O'Malley, Sheppard, Schwartz, and Mandelblatt (2004) reported that higher trust in healthcare providers was associated with higher preventive services utilization in low-income African-American women. Likewise, Musa, Schulz, Harris, Silverman, and Thomas (2009) identified that higher trust in physicians was associated with higher mammography use in elderly patients. To my knowledge, no previous studies have examined the influence of perceived discrimination and trust on breast cancer screening adherence

(mammography) among KA women. Thus, the purpose of this study is to examine the role of perceived discrimination and trust in breast cancer screening adherence among KA women

1. Korean Americans

Korean Americans, including both Korean-born and U.S. born, are the fifth-largest Asian American ethnic group in the U.S. (Asian Pacific Islander American Health Forum, 2011; Heo & Braun, 2014). The number of KA increased more than 60% from 1 million to 1.8 million and represented one of the fast growing Asian groups in the U.S. between 2000 and 2010 (The U.S. Bureau of labor Statistics, 2012). Among KAs, approximately 78% are first-generation (Korean-born) immigrants who are influenced by traditional Korean values (Gryn & Gambino, 2012; Park & Bernstein, 2008).

2. Breast cancer incidence, prevalence, mortality rate among KA women

Among KA women, breast cancer is a serious problem. Breast cancer is the most commonly diagnosed cancer and incidence rates steadily increased from 53.5 per 100,000 individuals in 1998 to 2002 (Miller, Chu, Hankey, & Ries, 2008) to 68.0 per 100,000 individuals in 2006 to 2010 (Torre et al., 2016). Between 1990 and 2008, the incidence of breast cancer among KA women nearly doubled according to data reported in the 13 Surveillance, Epidemiology, End Results (SEER) registries (Gomez et al., 2013). KA women also have the highest prevalence of breast cancers among other racial groups. For example, KA women have 1.4 times the prevalence of breast cancer as Japanese Americans, and KA women born in their native country have a higher prevalence of breast cancer than those born in the U.S. (Gomez, Clarke, et al., 2010; Gomez, Quach, et al., 2010). According to American Cancer Society (ACS, 2016), Asian women have a lower death rate from breast cancer compared to Whites (11.3 deaths/100,000 vs. 22.2/100,000). However, the breast cancer mortality rate of Asian women has remained constant, while the rate in other race/ethnic groups has declined (Centers for Disease Control and Prevention [CDC] 2016). Anderson et al. (2007) reported that the survival rates among KA women were low compared to other immigrants in the U.S. due to low employment, low income, younger age of cancer diagnosis, low hospitalization, and late stage at diagnosis.

3. **Risk Factors**

In the general population, the risk factors of developing breast cancer include older age, family history, race, dense breast tissue, early menarche, late menopause, having no children or having a first child after age 30, breast feeding, drinking alcohol, being overweight or obese (ACS, 2016; Fejerman & Ziv, 2008). These same risk factors apply to KA women as immigrants adopt western behaviors such as a later age at childbirth, fewer births, and higher body weight and thus are at higher risk of developing breast cancer (Torre et al., 2016). In fact, breast cancer incidence, in Asian countries of origin, were substantially lower than in the U.S in the report of the International Agency for Research on Cancer in 2012 (Ferlay et al., 2015). Of note, there is a higher breast cancer incidence among Korean American women (50.7/100,000) when compared to Korean women (34.3/100,000) (Choi et al., 2010). Relationships have been identified between the adoption of westernized behaviors, a more sedentary lifestyle, dietary styles, and the increasing prevalence of cancer (Anderson et al., 2007; Cho & Juon, 2006).

4. **Breast Cancer screening**

Breast cancer screening can detect cancers at an earlier stage when treatment options are available and reduce breast cancer mortality (de Koning, 2003). Recently, the U.S. Preventive Services Task Force (2016) made the changes to breast screening guidelines. According to the U.S. Preventive Services Task Force (2016), biennial screening mammography for women aged 50 to 74 years is recommended (Siu & USPSTF, 2016). The American Cancer Society and U.S. Preventive Services Task Force no longer recommends clinical or self-breast examination as a regular screening.

According to the American Cancer Society, about 68% percent of Asian American women older than 45 years reported having a mammogram in the past 2 years as compared to over 72% in the overall U.S. population (ACS, 2016). However, data from KA women showed a lower level of breast cancer screening compared to other Asian and non-Asian women. For example, the 3-year merged data from the 2001, 2003, and 2005 California Health Interview Surveys identified that KA women (n= 1,152) consistently had the lowest rates of breast cancer screening (mammogram) in the past 2 years

(57.1%) among American women including non-Latina White, Chinese, Filipino, South Asian, Japanese, and Vietnamese (Lee, Ju, Vang, & Lundquist, 2010). Among Asian subgroups, 20% in Chinese, to 28% in Vietnamese, and 30% in Korean women were never screened with mammography in the past (Ma, Shive, Wang, & Tan, 2009). In studies focused on breast cancer screening among KA women, the level of ever screened by mammography ranged from 10% to 81% (Choi et al., 2010; Han, Williams, & Harrison, 2000; Lee, Fogg, & Sadler, 2006; Lee, Kim, & Han, 2009; Lee et al., 2012; Wismer et al., 1998), and the level of mammography use in the past 2 years ranged from 25% to 65% (Choi et al., 2010; Juon, Choi, & Kim, 2000; Juon, Kim, Shankar, & Han, 2004; Juon, Seo, & Kim, 2002; Maxwell, Bastani, & Warda, 2000; Wismer et al., 1998; Yu, Hong, & Seetoo, 2003). These screening rates are well below the Healthy People 2020 goal of 81.1% and place KA women at risk for detecting breast cancer in later stages (Lee et al., 2016).

5. Breast cancer screening predictors among KAs

A range of predictors for breast cancer screening among KA women have been identified. In general, socioeconomic factors were important predictors for breast cancer screening. Several researchers reported that KA women who were older, married, employed, had higher household income and higher education levels were more likely to have had breast cancer screening (Juon et al., 2000; Juon et al., 2004; Lee et al., 2012; Lew et al., 2003; Wismer et al., 1998). Having insurance was a strong predictor of breast cancer screening (Lew et al., 2003; Ryu, Crespi, & Maxwell, 2013). Acculturation was also a predictor of breast cancer screening. KA women who resided in U.S. longer, and had better English language proficiency, were more likely to have breast cancer screening (Han et al., 2000; Juon et al., 2000; Juon et al., 2004; Juon et al., 2002; Lee et al., 2012; Maxwell et al., 2000). Health beliefs also affected breast cancer screening among the KA population. For example, Han et al. (2000) found KA women with higher perceived barriers to breast cancer screening never had mammography, and Lee et al. (2009) also found perceived benefits and perceived susceptibility were significant predictors of mammography use. In a qualitative study, fatalism was identified as a barrier to breast cancer screening among KA women (Suh, 2008).

6. **Perceived discrimination in healthcare**

The Institute of Medicine report (IOM) on unequal treatment in American healthcare reported that racial minorities receive a lower quality of health care compared to non-minorities (Nelson, 2002). This raised the concern that racial discrimination (a belief that one has experienced unfair treatment by others on the basis of one's social group membership) may play a major role in healthcare disparity. Asian Americans continue to experience discrimination in healthcare settings, and they may experience additional forms of culturally incompetent or poor treatment due to language barriers (Clough, Lee, & Chae, 2013). In fact, Asian Americans who did not speak English were more likely to report perceived discrimination and reported they would receive better care if they belonged to a different racial group (Lauderdale, Wen, Jacobs, & Kandula, 2006). There is a growing body of evidence that experiences of discrimination have a negative effect on health (mental and physical health) (Williams & Mohammed, 2009), and health behaviors (Crawley, Ahn, & Winkleby, 2008) either directly or indirectly. For example, Shariff-Marco et al. (2010) reported perceived racism directly influenced mammography use among multiethnic samples in California. Haywood et al. (2014) evaluated the association between perceived discrimination, non-adherence to physician recommendations and the role of patient trust in 235 participants with sickle cell anemia. The authors found that participants with higher levels of perceived discrimination from healthcare providers were more likely to report being non-adherent to physician recommendations. Also, the results showed that trust in healthcare providers mediated the discrimination and non-adherence relationship, accounting for 50% of the excess prevalence of non-adherence among those experiencing discrimination. Although no previous investigators examined the relationship between perceived discrimination and health behaviors in KAs, the positive associations between perceived discrimination and depression were reported among Korean immigrants in Canada (Noh & Kaspar, 2003; Noh, Kaspar, & Wickrama, 2007), and among Korean-American college students (Lee, 2005). To my knowledge, no study was conducted with KA to examine the relationship between perceived discrimination in healthcare and health behaviors.

7. **Trust in healthcare providers and healthcare system**

Trust is a crucial element of the client-provider relationship and an important factor for promoting positive health behaviors. Recently, growing numbers of researchers have examined trust within health care and its role in health behavior outcomes such as utilization of services, preventive screening, and adherence to medical advice (Musa et al., 2009; O'Malley et al., 2004; Lee and Lin, 2009; LaVeist et al., 2009). Although several definitions of health related trust exist, it can be defined as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (Mayer, Davis, & Schoorman, 1995, p. 712). In health care, trust has been distinguished or categorized by the object of trust such as trust in the physician (interpersonal trust) and/or trust in the healthcare system (healthcare system mistrust) which is characterized by attitude toward collective healthcare related organization (Goold, 2002; Hall, Dugan, Zheng, & Mishra, 2001; Mechanic, 1998; Rose, Peters, Shea, & Armstrong, 2004). Distrust and mistrust are similar concepts in that both represent a lack of trust or absence of trust (Corbie-Smith & Ford, 2006), and are hence used interchangeably in the literature. Studies have shown that people seemed to have different levels of trust in their health care provider and health care system, especially African-Americans and Hispanics showing consistently lower level of trust compared to their White counterparts (Halbert, Armstrong, Gandy, & Shaker, 2006; Kaiser et al., 2011; Talcott et al., 2007). Moreover, a number of studies have shown the influence of trust in health care provider and health care system on health service utilization and preventive screening with minorities like African-Americans and Hispanics. For example, trust in health care providers and the health care system were found to be strong predictors for breast cancer screening even when socioeconomic variables are controlled (Musa et al., 2009; O'Malley et al., 2004; Thompson, Valdimarsdottir, Winkel, Jandorf, & Redd, 2004; Yang, Matthews, & Hillemeier, 2011). Most studies related to trust and preventive screenings were conducted with African American and Hispanics.

B. Significance of the study

Korean American women have lower breast cancer screening rates, higher breast cancer prevalence, and lower survival rates due to diagnosis at late stage disease than other racial groups (Anderson et al., 2007; Lee et al., 2012). Prior research on breast cancer screening among KAs has focused on either socio-demographic, acculturation, access to care, and health belief variables and how these variables affected breast cancer screening (Chawla, Breen, Liu, Lee, & Kagawa-Singer, 2015; Choi et al., 2010; Eun, Lee, Kim, & Fogg, 2009; Han et al., 2000; Juon et al., 2000; Juon et al., 2004; Juon et al., 2002; Kagawa-Singer et al., 2007; Kim, Yu, Chen, Kim, & Brintnall, 1998; Lee et al., 2006; Lee et al., 2016; Lee et al., 2009; Lee, Stange, & Ahluwalia, 2014; Lee et al., 2012; Lew et al., 2003; Maxwell et al., 2000; Pourat, Lubben, Yu, & Wallace, 2000; Wismer et al., 1998; Yu et al., 2003). Perceived discrimination and trust have been identified as critical factors that influence health service utilization, health status, management of chronic illness, and patient satisfaction in other populations (Armstrong et al., 2006; Benkert, Hollie, Nordstrom, Wickson, & Bins-Emerick, 2009; Benkert, Peters, Clark, & Keves-Foster, 2006; LaVeist, Isaac, & Williams, 2009; Lee & Lin, 2009; Mohseni & Lindstrom, 2007; Whetten et al., 2006). Among Asian Americans, perceived discrimination and trust based on the patient-provider interaction and their influence on breast cancer screening is an understudied area and may be able to explain some of the low utilization of breast cancer screening among KA women. Identification of these factors is critically important to the health care of KA women. If perceived discrimination and trust are significant factors keeping KA women away from mammography, these issues need to be brought to the forefront of healthcare providers. Education programs for both providers and KA women would need to be developed to try and mitigate these real or perceived factors. Education programs for healthcare providers would be especially crucial and these programs would need to include identified provider and/or institutional behaviors that cause discrimination and low trust among KA women. These education programs should incorporate culturally responsive health care practices. Culturally responsive care include current cultural competency practice that integrates patient-level expectation and cultural practices (Ring, 2009). This study would lay the foundation for future work and to my knowledge, no

previous study has examined the influence of perceived discrimination and trust on breast cancer screening among KA women.

C. Specific Aims

Aim 1. Describe the levels of breast cancer screening rate, acculturation, cultural beliefs, perceived discrimination in healthcare, trust in healthcare providers, and trust in the healthcare system among KA women aged 50 to 74 years.

Aim 2. Identify predictors of breast cancer screening (mammography) (ever screened and screened within the past 2 years) in KA women.

H1. KA women who have been screened for breast cancer with mammography ever or within the past 2 years (two separate analyses), when compared to KA women who have never been screened or not screened within the past 2 years will have:

H1a. higher levels of acculturation;

H1b. lower levels of cultural beliefs;

H1c. lower levels of perceived discrimination in healthcare;

H1d. higher levels of trust in healthcare providers; and

H1e. higher levels of trust in the healthcare system.

Aim 3. Examine the indirect (mediation) effect of perceived discrimination, acculturation, and cultural beliefs on mammography through trust.

H2. Perceived discrimination in healthcare, acculturation, and cultural beliefs will have indirect effect on mammography through trust in the healthcare provider and trust in healthcare system.

II. CONCEPTUAL FRAMEWORK AND RELATED LITERATURE

A. Conceptual framework

The conceptual framework for this study is based on the Betancourt's Integrative Model of Culture, Psychological Processes, and Behavior adapted for health behavior (Betancourt & Flynn, 2009), Social Stress Theory (Aneshensel, 1992; Pearlin, 1989), and a thorough literature review on the breast cancer screening adherence among Korean American women.

The major concepts of the Betancourt's Integrative Model of Culture, Psychological processes, and Behavior adapted for health behavior (Betancourt & Flynn, 2009) are as follows: First, population categories such as race, ethnicity, and social economic status (SES) are integral to the model. Second, cultural factors which include positive or negative health care interactions that are socially shared among members of low SES or minority groups. These interactions would become part of the groups socially shared belief system (perceived discrimination). Own beliefs and expectations about healthcare providers would influence health behaviors in addition to their perception of care and interaction with healthcare providers. The third part of the model is psychological processes such as cognition, motivation, and emotions relevant to health behaviors and interactions with the healthcare system (trust in healthcare providers and healthcare system). The last part of the model consists of health behaviors such as cancer screening adherence (mammography). The key principles of the model are that relationships among the concepts are believed as determinants of health behavior are structured from most distal to more proximal (moving from 1st to 4th). The proximity to health behavior determines the strength of impact, and the cultural factors may have direct and/or indirect influence on health behavior through psychological processes (Betancourt & Flynn, 2009; Flynn, Betancourt, & Ormseth, 2011).

The Social Stress Theory argues that certain groups (e.g. race/ethnicity, SES) within society are in a disadvantaged social status and may be exposed to increased social sources of stress (Aneshensel, 1992). Perceived discrimination, a belief that one has experienced unfair treatment by others based on one's social group membership, is conceptualized as a common and serious social stressor in the Social Stress Theory (Thoits, 2010). Perceived discrimination results in chronically high levels of stress shared

by members of disadvantaged groups that accrues over time and leads to negative health consequences for racial minorities (Anderson, 2013; Aneshensel, 1992; Pearlin, 1989). This definition of perceived discrimination corresponds to the definition of cultural factors in the Betancourt's integrative model that the cultural factors can be positive or negative healthcare interactions that are socially shared among people in low social economic status (SES) or ethnic minority groups.

According to the Betancourt's integrative model, psychological processes include cognition, motivation, and emotions relevant to health behaviors and interactions with the healthcare system. Trust in healthcare has been characterized as a multifaceted concept consisting of a cognitive element and an affective dimension based on perceptions of care and interactions with healthcare professionals (Gilson, 2003; Mayer et al., 1995; Rowe & Calnan, 2006). In general, trust or trust in someone is a voluntary action based on expectations of how others will behave or response to yourself in the future. These expectations may be violated and broken and may cause negative health outcomes (Brockner & Siegel, 1996).

Previous researches have focused on specific elements such as the effect of either social, structural, cultural, or psychological factors as determinants of breast cancer screening adherence and have shown mixed findings of its influence on breast cancer screening adherence. One of the explanations for these mixed findings could be that the previous studies lack explanations of possible interrelationships among factors attributing to breast cancer adherence and the effect of patient-provider interaction. The Betancourt's integrative model of culture, psychological processes, and behavior adapted for health behavior (Betancourt & Flynn, 2009) is unique in that it allows examination of the complex interrelationships among multiple phenomena relevant to patient-provider interaction and health behavior in culturally diverse patients.

Using the model of Betancourt's Integrative Model of Culture, Psychological Processes, and Behavior adapted for health behavior and the Social Stress Theory, perceived discrimination in healthcare will have direct effect on breast cancer screening adherence (mammography) and/or indirect effect on the

breast cancer adherence (mammography) through trust, and trust will have direct effect on breast cancer screening.

Table I

BETANCOURT'S INTEGRATIVE MODEL, CONCEPTUAL DEFINITION, AND RELATED LITERATURE VARIABLE

| Betancourt's model label | Conceptual Definition | Variables |
|--------------------------|---|--|
| Population categories | . Social categories or cultural variation | . Age, residency in US, immigration status, education, marital status, income, employment, insurance, usual source of care, physician-patient concordance, able to find Korean physicians, able to receive care where wanted, know where to go for mammogram, SRH, family history of breast cancer |
| Cultural factors | . Values, beliefs, norms, and practices that are socially shared among individuals from a particular population or society that are relevant to health behaviors and interactions with the health care system | . Perceived discrimination in healthcare . Cultural beliefs . Acculturation |
| Psychological process | . Cognitive element and an affective dimension based on perceptions of care and interactions with healthcare professionals | . Trust in healthcare providers . Trust in healthcare system |
| Health Behaviors | . Health behaviors and interactions with the healthcare system | . Mammography |

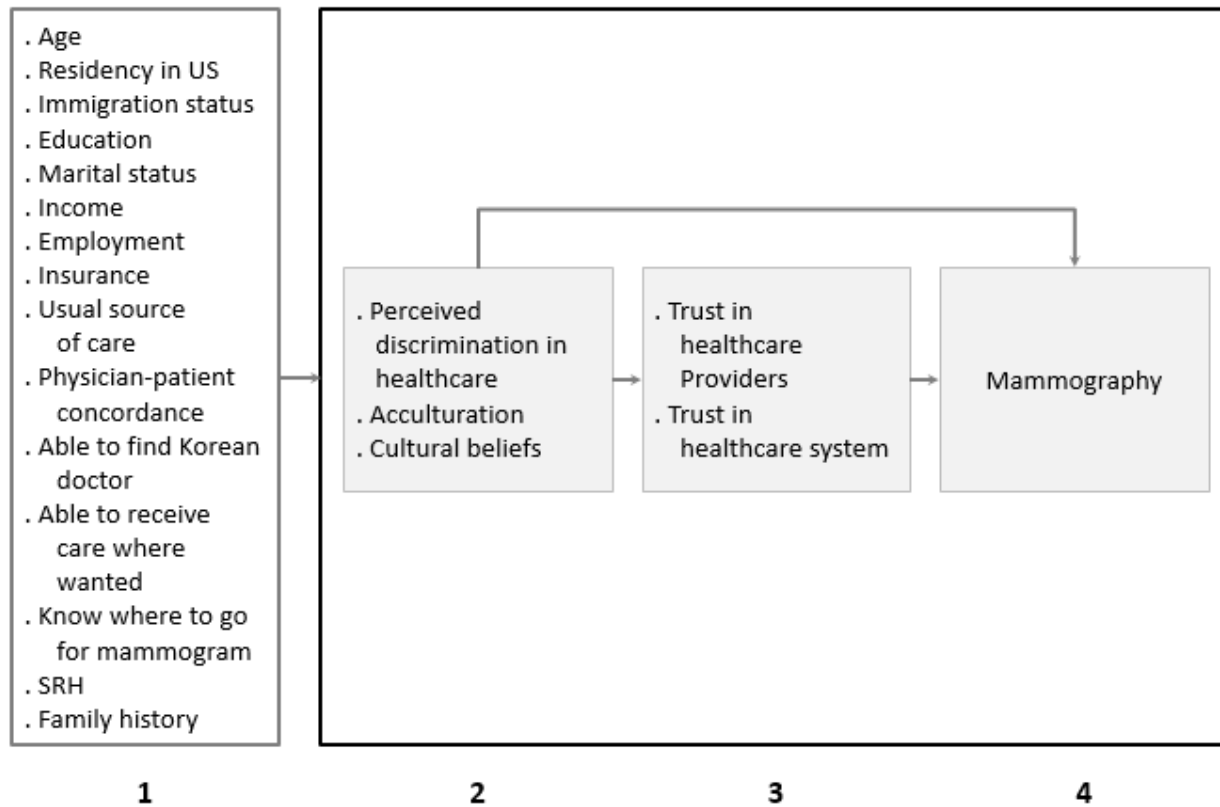


Figure 1. Conceptual framework for this study

B. Literature Review

1. Socio-demographics, health, and breast cancer screening among KA women

In general, age, education, marital status, and employment were consistent predictors of breast cancer screening among KA women. In general, older women (50-64 vs less than 50) were more likely to be adherent to breast cancer screening (Choi et al., 2010; Eun, Lee, Kim, & Fogg, 2009; Juon et al., 2000; Kagawa-Singer et al., 2007; Yu et al., 2003). Higher level of education (Eun et al., 2009; Juon et al., 2004; Juon et al., 2002), being married (Lee et al., 2006; Lew et al., 2003; Wismer et al., 1998), and being employed were associated with breast cancer screening among KA women (Lee et al., 2012; Wismer et al., 1998). Income was not associated with breast cancer screening adherence among KA women (Chawla, Breen, Liu, Lee, & Kagawa-Singer; Choi et al., 2010; Eun et al., 2009; Juon et al., 2000; Lee et al., 2009; Lee et al., 2016). Self-rated health (SRH) and comorbidities also seemed to have no effect on breast cancer screening among KA women (Juon et al., 2004; Juon et al., 2002; Lee et al., 2006; Lee et al., 2009; Lee et al., 2012).

2. Health care access and breast cancer screening among KA women

A large proportion of KAs are uninsured. About one-third of KAs are uninsured primarily due to low employer-sponsored insurance coverage among KAs. Employer sponsored coverage for Korean Americans was about 49 percent (The Henry J. Kaiser Family Foundation, 2008). Many Korean Americans are self-employed or work in small businesses, and they are less likely to receive health benefits from employment (The Henry J. Kaiser Family Foundation, 2008). However, the rate for insurance coverage among KA is expected to be higher now since The Patient Protection and Affordable Care Act of 2010 (Levy, Bruen, & Ku, 2012). Having insurance is a strong predictor for health care utilization. Among KA women, having insurance was a significant predictor of breast cancer screening (Choi et al., 2010; Eun et al., 2009; Juon et al., 2004; Juon et al., 2002; Lew et al., 2003; Yu et al., 2003). In addition to insurance, having a usual source of care is another measure of access to care that is related

to preventive service utilization and medical care (Corbie-Smith, Flagg, Doyle, & O'Brien, 2002). Among KA women, a usual source of care was significantly associated with breast cancer screening (Eun et al., 2009; Lee et al., 2006, Lee et al., 2016). The relationship between screening behaviors and patient-physician concordance had been examined in Latinos and Asians and found to be a significant predictor of breast cancer screening (Eamranond, Davis, Phillips, & Wee, 2011; Thompson et al., 2014). Contrast to these findings, KA women with Korean physicians were less likely to have breast cancer screening than those with non-Korean physicians (Juon et al., 2004; Lew et al., 2003).

3. Acculturation and breast cancer screening among KA women

Acculturation refers to "the process in which the attitudes and behaviors of persons from one culture are modified as a result of contact with a different culture" (Moyerman & Forman, 1992, p. 163). Acculturation has been operationalized as nativity and length of residence in the literature. Women who were born in Korea had a higher rate of breast cancer screening (Lee et al., 2012), but Kagawa-Singer et al. (2007) reported those who were born in U.S. were more likely to have breast cancer screening. Women who had lived longer in the U.S. had a higher rate of breast cancer screening (Lee et al., 2006; Lee et al., 2014; Lee et al., 2012; Maxwell et al., 2000; Yu et al., 2003). Conversely, some studies showed no association between length of stay and breast cancer screening (Eun et al., 2009; Juon et al., 2000; Juon et al., 2002; Lee et al., 2009; Lew et al., 2003; Wismer et al., 1998).

4. Cultural beliefs and breast cancer screening among KA women

Cultural beliefs are important factors considering Korean American women are predominantly first-generation immigrants (Gryn & Gambino, 2012; Lee et al., 2016). Culture is unique shared beliefs, values, and practices that directly influence health behaviors (Pasick, D'Onofrio, & Otero-Sabogal, 1996). In KA women, a few studies have examined the influence of cultural factors on breast cancer screening. Of these studies, fatalism was found to be an important factor for women to have breast cancer screening in a qualitative study among KA women aged between 20 to 81 years. In the same study, KA women stated that they would not go and see a doctor unless they were sick or symptoms were

present (Suh, 2008). Conversely, modesty was not associated with breast cancer screening among KA women (Lee et al., 2009).

5. **Perceived discrimination and breast cancer screening**

Perceived discrimination in healthcare is belief that one has experienced unfair treatment in healthcare settings based on her or his race/ethnicity, or other demographic or socioeconomic status (Gonzales et al., 2013; Kressin, Raymond, & Manze, 2008). Minorities tend to receive a lower quality of healthcare and lower cancer screening than Whites even after health care access barrier factors are controlled such as insurance and income (Smedley, Stith, & Nelson, 2003). In a report on unequal treatment in American healthcare from the Institute of Medicine (Smedley, Stith, & Nelson, 2003), racial and ethnic discrimination were identified as having major causal roles in health care disparities and had been a consistent significant factor that negatively affected both mental and physical health (Pascoe & Smart Richman, 2009). However, the relationship between perceived discrimination and cancer screening had been inconsistent in the literature.

Hausmann et al. (2008) used data from The Behavioral Risk Factor Surveillance System (BRFSS) that included 28,839 multiethnic samples from 7 States to examine the relationship between perceived discrimination in health care and 7 preventive health services. They reported less utilization of mammography in participants who perceived negative discrimination compared to who did not perceive negative discrimination. Crawley et al. (2008) used the California Health Interview Surveys (n=11,235) that included minority adults (African-American, American-Indian/Alaskan-Native, Asian, and Latino) to examine the relationship between perceived discrimination in healthcare and screening rates for colorectal and breast cancers and found women who perceived discrimination had lower breast screening compared to women who did not perceive discrimination. Conversely, Blanchard and Lurie (2004) examined the influence perceptions of the patient-provider relationship on health care utilization in 6,722 individuals that included African Americans, Hispanics and Asian Americans. Although 14.1% of African Americans, 19.4% of Hispanics, and 20.2% of Asian Americans reported they had experiences of being treated with

disrespect or being look down in patient-provider relationship, no association was identified between negative perceptions and cancer screening. Several other studies also reported that perceived discrimination was not associated with breast cancer screening (Benjamins, 2012; Dailey, Kasl, Holford, & Jones, 2007; Jacobs et al., 2014; Mouton et al., 2010; Shariff-Marco, Klassen, & Bowie, 2010; Sheppard et al., 2008). The relationship between perceived discrimination and cancer screening has not been examined in the KA population.

6. Predictors of trust

Race/ethnicity was a consistent predictor of trust. The majority of studies that focused on trust were conducted with African Americans and Non-Hispanic Whites. African Americans consistently reported lower levels of both trust in health care providers and health care system (Armstrong et al., 2008; Armstrong et al., 2013; Armstrong, Ravenell, McMurphy, & Putt, 2007; Boulware, Cooper, Ratner, LaVeist, & Powe, 2003; Do et al., 2010; Gordon, Street, Sharf, Kelly, & Soucek, 2006; Halbert et al., 2006; Halbert et al., 2009; Hammond, 2010; Kaiser et al., 2011; Keating, Gandhi, Orav, Bates, & Ayanian, 2004). Older age was also consistently associated with lower levels of trust (Benjamins, 2006; Boulware et al., 2003; Freburger, Callahan, Currey, & Anderson, 2003; Hammond, 2010; Tarn et al., 2005). However, one study with Chinese American reported a contrasting finding which reported a significant association between younger age and lower level of trust in physicians (Simon, Zhang, & Dong, 2014). The relationship between education and trust is conflicting in the literature. Armstrong et al. (2007), Armstrong et al. (2013), and Halbert et al. (2009) reported that less educated patients had lower levels of trust or high levels of mistrust while Kayaniyil et al. (2009), O'Malley et al. (2004), and Simon et al. (2014) identified a significant association between less education and higher levels of trust. Income and insurance status were also conflicting predictors of trust. Armstrong et al. (2007) reported lower income was significantly associated with lower level of trust in physician while Armstrong et al. (2008) and Benjamin (2006) found higher income was significantly associated with lower trust level.

Perceived discrimination was a significant predictor of trust. Jacobs et al. (2011) conducted a study with 17 focus groups with African-Americans, Hispanics, and White participants to

explore the factors contributing to trust and distrust in health care. In this study, both African American and Hispanics reported expectations of discrimination as determinants of distrust. Armstrong et al. (2013) examined the relationship between racial discrimination and health care system among African Americans and Whites. They reported that both healthcare system distrust and race were strongly associated with prior experiences of racial discrimination.

Hammond (2010) examined the relationships between discrimination experience, perceived racism, and medical mistrust among African American men. Perceived racism and discrimination experience were significant predictors of medical mistrust, and perceived racism in healthcare was the most powerful predictor after controlling for other variables. The author also tested perceived racism as a mediator and found that perceived racism mediated the relationship between discrimination experiences and medical mistrust. Asian Americans reported lower levels of trust when their family or friend had been treated unfairly when seeking medical care because of race or ethnicity and doctors did not treat them with a great deal of respect (Ngo-Metzger, Legedza, & Phillips, 2004).

7. Trust in healthcare providers and breast cancer screening

Trust in the healthcare provider is crucial for the patient provider relationship, essential for effective communication, and an indicator for high quality care delivered (Benkert et al., 2009; Bonner, Ferrans, Moore-Burke, & Gorelick, 2005; Tarn et al., 2005). Yet, minorities are more likely to report lower trust and satisfaction toward their providers compared to Whites (Simon et al., 2014). Trust in healthcare providers has been a predictor for cancer screening. O'Malley et al. (2004) examined the role of trust in the primary provider on preventive services among low income African American women and found higher trust was associated with greater use of preventive cancer screening including mammogram even after controlling for insurance status and socio-demographic factors. Among African American and White older adults (n=1,681), higher trust in the provider was also associated with a greater likelihood of receiving breast cancer screening (Musa et al., 2009). Mainous et al. (2004) investigated the association between continuity of care and trust in one's physician and stage of cancer detection among

119 newly diagnosed breast cancer and colorectal cancer patients, and they found only trust was associated with earlier detection of cancer.

8. Trust in healthcare system and breast cancer screening

The confidence level in healthcare system has decreased profoundly in past decades. Only 34% of adults stated "a great deal" of confidence in the health care system in 2010 compared to over 70% in 1966 in America (The Harris Poll, 2010), and low trust levels in the healthcare system have been associated with low utilization of healthcare services. Among Asian Americans including KAs, trust in healthcare system is virtually unknown. Among African American women (n=184), distrust in the healthcare system was directly related to lower breast cancer screening (Katapodi, Pierce, & Facione, 2010). Yang et al., (2011) examined whether healthcare system distrust was a barrier to cancer screening among 5,268 adults, and found a higher level of healthcare system distrust was associated with lower breast and cervical breast screening. Among South Asian Americans, participants with a higher level of mistrust in healthcare system were less likely to have stool blood test completion, but not endoscopy completion (Menon, Szalacha, Prabhughate, & Kue, 2014).

III. METHODOLOGY

A. Research Design

A cross-sectional survey design was used to examine the factors contributing to breast cancer screening adherence among KA women. This study was guided by the Betancourt's Integrative Model of Culture, Psychological processes, and Behavior adapted for health behavior (Betancourt & Flynn, 2009), Social Stress Theory (Aneshensel, 1992; Pearlin, 1989), and based on a comprehensive literature review on KA women. Data were self-reported using a demographic data collection form and valid and reliable questionnaires detailed below.

B. Sample

1. Selection criteria

The target sample was KA women living in Chicago and the greater metropolitan areas. A convenience sample of KA women who met the following eligibility criteria were recruited: (1) age between 50 to 74 years, (2) had no history of any type of cancer, and (3) were able to read and understand either Korean or English.

2. Power Analysis

An a priori power analysis using three components was conducted, (1) the significant criterion, (α) probability of committing a type I error, (2) statistical power or the probability of not committing a type II error, and (3) the effect size (w for chi square and odds ratio for logistic regression), the degree or magnitude of the difference between groups. Two power analyses were performed based on the statistical analysis for binary outcome variables.

For the chi square analysis, power was set at .80, and alpha was set at .05. Cohen (1998) defines small, medium, and large effect size for chi square analysis as .1, .3, and .5 respectively. Using a medium effect size, the sample size yielded was 108 participants.

The effect size, odds ratio with logistic regression, was estimated based on the previous studies related to perceived discrimination and cancer screening among minorities. In a study examining the relationship between perceived discrimination and cancer screenings among African-American,

American-Indian/Alaskan-Native, Asian, and Latino adults, odd ratio (OR) ranged from 0.30 to 0.52 (Crawley, Ahn, & Winkleby, 2008). Simonds, Colditz, Rudd, and Sequist (2011) studied cancer screenings in Native Americans in California and found participants who experienced discrimination were less likely had breast cancer screening (OR=0.42; CI=0.20-.0.89). Gonzalez et al. (2013) examined the relationship between perceived experiences of discrimination in healthcare and cancer screening Among American Indian Women with Type 2 Diabetes, and found perceived discrimination was significantly associated with not being current for clinical breast examination (OR=2.64; CI=1.12–6.19) and Papanicolaus (Pap) test (OR=2.64, CI=1.13–6.18). Based on the OR from previous literature, $\alpha=.05$, power=.80, and OR=0.35 were entered in GPower 3.1 software to calculate the sample size and the sample size of 147 participants was yielded. Based on the results of power analysis and considering about 10% of drop rates, the target sample size of this study was 165.

C. Recruitment and Enrollment

The principal investigator (PI) contacted major Korean churches in Chicago and metropolitan areas. The PI then asked the permission from the key personnel (pastors or gatekeepers) in the Korean churches so the PI can recruit participants before and after worship services on Sundays. With permission, a table was set up with study flyers. Once women showed interest in the study, they were screened for eligibility. If they were eligible, participants filled out the questionnaire in a separate room provided in church.

D. Data Collection

Data collection began after obtaining approval from the Institutional Review Board (IRB) at the University of Illinois at Chicago. Informed consent was waived as minimal personal information and minimal risks were presented in this study. Participants who were willing to participate in the study were asked to read the information letter. Before agreeing to participate in the study, the PI carefully explained the study purpose, potential benefits, and time commitment of the study to each potential participant. Surveys approximately took 15 to 20 minutes to complete.

To minimize risks to privacy and to protect the confidentiality, only the PI and two PhD students who completed CITI and HIPAA training recruited the participants and explained the study. All surveys were conducted in a separate room. Each participant was assigned an identification code. Only the PI and a faculty advisor (Dr. Eileen Collins) had the access to collected data and any other documents related to the data.

E. Instrumentation

The survey instruments included questions to measure background variables, access to health care, acculturation, perceived discrimination in healthcare, trust in healthcare providers, trust in healthcare system, and breast cancer screening adherence. All data were self-reported. The independent variables corresponded to the Betancourt's integrative model of health behavior.

1. Dependent variables: breast cancer screening adherence

The questions related to breast cancer screening adherence were from a recent guideline published from U.S. Preventive Services Task Force (2016). U.S. Preventive Services Task Force (2016) recommends women aged 50 to 74 years to have biennial screening mammography (Siu & USPSTF, 2016). Two questions related to lifetime screening and recent screening were asked to assess the level of breast cancer screening adherence.

(1) Lifetime screening: Have you ever received a mammogram?

(2) Recent screening: Have you received a mammogram in the last 2 years?

Each question was answered with a yes or no.

2. Independent variables

a. Acculturation

Acculturation was measured with a Short Acculturation Scale for Koreans (SAS-K) (Choi & Reed, 2011). This scale was originally developed for Hispanics (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987) and commonly used among Hispanics and the Asian population with sound psychometric properties (dela Cruz, Padilla, & Agustin, 2000; Gupta & Yick, 2001; Yoshioka, Gilbert, El-Bassel, & Baig-Amin, 2003). SAS-K is a 12-item questionnaire that has been designed to

measure three parts or dimensions of acculturation: (a) language use and preference at work, at home, and with friends; (b) language use and preference in media (TV and radio) programs; and (c) preferred ethnicity of individuals in social relations. The responses are scored on a 5-point Likert scale, ranging from 1 point (only Korean) to 5 points (only English). The scores are averaged across items (range of scores is 1 through 5). The score close to 5 indicate high levels of acculturation and the score close to 1 indicate little acculturation. According to authors who developed the original version, an average of 2.99 can be used as a point to divide respondents to less acculturated (average score between 1 and 2.99) and more acculturated (average score above 2.99). In Korean Americans, Cronbach's alpha for each subscale ranged from .80 to .95 and overall Cronbach's alpha was .93 supporting internal consistency (Choi & Reed, 2011). Criterion validity was tested with SAS-K and length of residence ($r=.51, p<.001$), age of arrival ($r=-.62, p<.001$), and English proficiency ($r=.74, p<.001$). Construct validity was also examined with factor analysis which confirmed three factors (Choi & Reed, 2011). In this study, Cronbach's alpha was 0.90, with each subscale ranging from 0.73 to 0.86.

b. Ferrans Cultural Beliefs Scale

Cultural beliefs were measured by The Cultural Beliefs Scale (Ferrans et al., 2007). This scale was developed to assess cultural beliefs related to the later stages of breast cancer at the time of diagnosis among Caucasian, African American, and Hispanic women. This scale consists of 17-items, answered in true or false response. The total score ranges from 0 to 17, and higher scores indicate more cultural myths among KA women. In the original scale development, focus groups and cognitive interviews were conducted, and the identified items were clearly understood by participants as intended. Among first generation Muslim women, perceived barriers and cultural belief scale were moderately correlated ($r = 0.39, p < 0.001$), supporting construct validity (Hasnain, Menon, Ferrans, & Szalacha, 2014). This scale has not been used with KAs. In this study, Cronbach's alpha was 0.65 indicating a slightly low, but acceptable, internal consistency.

c. Perceived discrimination in healthcare

Perceived discrimination in healthcare was measured by a Bird and Bogart's

modified version of Williams' Everyday Discrimination Scale (Bird & Bogart, 2001; Williams, Yan, Jackson, & Anderson, 1997). Perceived discrimination in healthcare is a 7-item scale that is scored on a 5-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = most of the time, and 5 = always). A total score ranges from 7 to 35, and higher score indicates greater perceived discrimination. Cronbach alpha was .60 in Latinas, .94 in American Indians, and .89 in African Americans. Factor analysis confirmed one factor solution (Gonzales et al., 2013; Peek, Nunez-Smith, Drum, & Lewis, 2011; Sheppard et al., 2008). Convergent validity was confirmed by examining the relationship between perceived discrimination in healthcare and societal discrimination ($r=.51, p<.001$), and perceived discrimination in healthcare and the overall African American Trust in Health Care scale with African Americans ($r=.27, p=.02$) (Peek et al., 2011). In Korean Americans, Cronbach's alpha was .90 with a 9-item version of Everyday Discrimination Scale, and construct validity was supported by a significant relationship between perceived discrimination and depression ($r=.38, p<.01$) with 304 Korean immigrants who resided in New York City (Bernstein et al., 2011). In this study, the Cronbach's alpha was 0.88 indicating support for internal consistency.

d. Trust in healthcare providers

The Trust in Physician (TIP) scale was developed by Anderson and Derrick (1990) to measure the level of interpersonal trust in the patient-physician relationship. The TIP consists of 11 items and each item is rated on a 5-point Likert scale that ranges from strongly disagree (1) to strongly agree (5). Items 1, 5, 7, 11 are reverse coded and all items are summed to produce a total score (range=11 to 55). Participants with higher score have higher trust in healthcare providers. Internal consistency in the original scale was .90 and the Chinese version of TIP scale was .84 (Simon et al., 2014). One-month test-retest reliability was .77 in primary care patients (Thom, Ribisl, Stewart, & Luke, 1999). Construct validity was supported by a significant relationship between TIP and satisfaction with physicians in two studies ($r=.62, p< 0.001$; $r=.73, p< 0.001$) and TIP and desire for clinician's control ($r=.48, p< .001$) (Anderson & Dedrick, 1990; Thom et al., 1999). This scale has not been used with KAs. In this study, Cronbach's alpha was 0.82 supporting the instrument's internal consistency.

e. Trust in healthcare system

A revised Health Care System Distrust (HCSD) scale consists of 9 items developed from diverse racial/ethnic focus groups. The 9 questions were rated on a 5-point Likert scale (strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree), producing a possible distrust score ranging between 9 and 45. Items 1, 3, 6, and 7 are reverse coded so the higher score means higher distrust in healthcare system. The scale consists of two subscales (1) value distrust (5 items, Cronbach's alpha = 0.73), and (2) competence distrust (4 items, Cronbach's alpha = 0.77). Factor analysis confirmed a 2 factor structure. Both reliability and validity were similar for African Americans and Whites (Shea et al., 2008; Yang, Matthews, & Hillemeier, 2011). The value and competence subscale were negatively associated with the Physician Trust Subscale of the Primary Care Assessment Survey ($r = -.30$, $r = -.33$), a global item assessing trust in the healthcare system ($r = -.42$, $r = -.55$), and a global item assessing general social trust from the General Social Survey ($r = -.35$, $r = -.27$) supporting construct validity (Shea et al., 2008). This scale has not been used with KAs. In this study, Cronbach's alpha was 0.83 indicating strong internal consistency.

3. Background variables

Background variables such as age, length of stay in US, education, marital status, income, employment, SRH, family history of breast cancer, and access related variables such as insurance, usual source of care, whether KA women knows where to go for mammogram, whether KA women were able received care where wanted, and physician-patient concordance were collected.

F. Translation process

The Ferrans Cultural Beliefs, Perceived discrimination in healthcare, The Trust in Physician (TIP), and A revised Health Care System Distrust (HCSD) scales were translated. Following steps were utilized to enhance the validity of translation.

Step 1: The Committee-Based Translation

The Committee-Based Translation method is an approach to decrease the introduction of cultural bias inherent in the native language by collaborative and consensus translation efforts (Furukawa,

Driessnack, & Colclough, 2014; Martinez, Marín, & Schoua-Glusberg, 2006). Contrast to the Brislin forward-backward translation approach, the Committee-Based Translation maximizes retaining the meaning of concepts that may be altered during the forward-backward translation. Three bilingual Korean PhD students, who had research experience and familiarity with both Korean and Western culture, were asked to translate the scales. Each translator independently translated the scales and several meetings were held to discuss, resolve, and adjudicate the translation.

Step 2: Expert review

Dr. Lee, Hyeonkyeong who had experiences in translating instruments and who were familiar with both Korean and Western culture was invited to evaluate the translated version. This process enhanced the conceptual equivalence across cultures, and thus added content validity.

Step 3: Cognitive interviews

The translation of the scales was pre-tested using cognitive interviews with 10 Korean-American women between 50 to 74 years old. Cognitive interviews were used during the pre-testing phase of questionnaires to detect items and words that were not understood by the participants as intended by the researchers (Beatty, 2004). Verbal Probing techniques was used during the cognitive interview. Each participant was asked the survey question (Beatty & Willis, 2007; Willis, Royston, & Bercini, 1991). If there were differences in the interpretation of the question, the translation was reviewed for modification by the translators. Eight questions were returned for re-translation. Questions were modified and reviewed by the participants.

Step 4: Review of translated scales

Cognitive interview ensured that Korean American women understand the translations clearly. The final scales were taken back to Dr. Lee for final confirmation that translated scales were clear and conceptually equivalent.

G. Data Analysis

All data analyses were conducted using Stata/IC version 12, SPSS 24, and SPSS PROCESS. Missing data were minimized as the PI and two research assistants were available to answer any questions

and check for missing data during the survey collection. The data were first analyzed using central tendency and dispersion measures for continuous variables and frequencies and percents for categorical variables. Cronbach's alphas were determined to find the internal consistency of acculturation, cultural beliefs, perceived discrimination in healthcare, trust in physician, and healthcare system distrust scales. Descriptive analyses were completed using measures of central tendency and dispersion, frequencies and percent to describe the levels of breast cancer screening rate, acculturation, cultural beliefs, perceived discrimination in healthcare, trust in healthcare providers, and trust in the healthcare system among KA women aged 50 to 74 years. Bivariate analyses were completed using Chi-square and Fisher's exact tests to assess statistical difference between groups for categorical variables and t-test to assess differences between groups for continuous variables. Multiple logistic regressions and Firth logistic regressions were completed to find predictors of ever screening and screening within the past 2 years. Bootstrapping using SPSS PROCESS was performed to test indirect effect of perceived discrimination in healthcare, acculturation, and cultural beliefs on breast cancer adherence (mammography) through trust.

Table II
THE MEASURES OF THIS STUDY (ACCUULTURATION)

| Variables | Scales | Scoring | Reliability | Validity |
|---|--|--|--|---|
| Acculturation <u>* conceptual definition</u> "The process in which the attitudes and behaviors of persons from one culture are modified as a result of contact with a different culture" (Moyerman & Forman, 1992, p. 163) | <ul style="list-style-type: none"> • 12-item Korean translated Short Acculturation Scale (SAS-K) (Choi & Reed, 2011) • SAS-K (3 subscales) <ul style="list-style-type: none"> <u>1. Language use and preference at work, at home, and with friends</u> (5 items; Cronbach's alpha was 0.89 in Korean Americans with type 2 DM) <u>2. Language use and preference in media (TV and radio) programs</u> (3 items; Cronbach's alpha was 0.95 in Korean Americans with type 2 DM) <u>3. Preferred ethnicity of individuals in social relations</u> (4 items; Cronbach's alpha was 0.80 in Korean Americans with type 2 DM) | <ul style="list-style-type: none"> • 5-point Likert-type scale • Language and media scores ranging from 1 point (only Korean) to 5 points (only English) • Ethnic-social relations scores ranging from 1 point (all Koreans) to 5 (all Americans) • Overall score calculated by averaging scores across all 12. Therefore, the total score can range from 1 to 5 where scores close to 5 indicate high levels of acculturation and those close to 1 indicate little acculturation • According to guidelines an average of 2.99 can be used to differentiate the less acculturated respondents (average score between 1 and 2.99) and the more acculturated (average score above 2.99) | <ul style="list-style-type: none"> • Cronbach's alpha for overall scale is .93 in Korean-Americans with type 2 DM • In this study, Cronbach's alpha for overall scale was 0.90 | <ul style="list-style-type: none"> • Criterion validity <ol style="list-style-type: none"> 1. Significant correlations between length of residence and SAS-K ($r=.51, p<.001$) 2. Age of arrival negatively correlated with SAS-K ($r=-.62, p<.001$) 3. English proficiency associated positively with SAS-K ($r=.74, p<.001$) • Construct validity: CFA confirmed three factors/subscales * tested with Korean-Americans with type 2 DM (Choi & Reed, 2011) |

Table III
THE MEASURES OF THIS STUDY (FERRANS CULTURAL BELIEFS SCALE)

| Variables | Scales | Scoring | Reliability | Validity |
|---|--|--|---|--|
| Cultural beliefs <u>* conceptual definition</u> Unique shared beliefs, values, and practices that directly influence health behaviors (Pasick, D'Onofrio, & Otero-Sabogal, 1994) | <ul style="list-style-type: none"> • The 17-item Ferrans Cultural Belief Scale (Ferrans et al., 2007) | <ul style="list-style-type: none"> • True or false • The total score ranges from 0 to 17 | <ul style="list-style-type: none"> • Cronbach alpha was $>.70$ in Muslim women • In this study, Cronbach's alpha was 0.65 | <ul style="list-style-type: none"> • Cognitive interviews: Items were clearly understood by participants as intended. • Among first generation Muslim women, perceived barriers and cultural belief scale was moderately correlated ($r = .39$, $p < 0.001$) (Hasnain et al., 2014) |

Table IV
THE MEASURES OF THIS STUDY (PERCEIVED DISCRIMINATION IN HEALTHCARE)

| Variable | Scale | Scoring | Reliability | Validity |
|--|---|---|--|---|
| Perceived discrimination in healthcare <u>* conceptual definition</u> The belief that one has experienced unfair treatment in healthcare settings based on her or his race, ethnicity, or other demographic or SES (Gonzales et al., 2013; Kressin et al., 2008). | <ul style="list-style-type: none"> • Perceived discrimination in healthcare (Bird & Bogart, 2001), a modified version of 9 item Everyday Discrimination Scale • 7 items | <ul style="list-style-type: none"> • a 5-point Likert scale (never to always) • The total score ranges from 7 to 35 | <ul style="list-style-type: none"> • Cronbach alpha was 0.60 in Latinas, 0.94 in American Indians, and 0.89 in African Americans (Gonzales et al., 2013; Peek et al., 2011; Sheppard et al., 2008) • Cronbach's alpha was 0.90 with a 9 item version of Everyday Discrimination Scale with 304 Korean immigrants who resided in New York City (Bernstein et al., 2011) • In this study, Cronbach's alpha was 0.88 | <ul style="list-style-type: none"> • Construct validity: Factor analysis confirmed one factor solution (Gonzales et al., 2013; Peek et al., 2011; Sheppard et al., 2008) • Convergent validity: Confirmed by examining the relationship between perceived discrimination in health care and societal discrimination ($r=.51$, $p<.001$), and perceived discrimination in health care and the overall African American Trust in Health Care scale ($r=.27$, $p=.02$) with African Americans (Peek et al., 2011) |

Table V
THE MEASURES OF THIS STUDY (TRUST IN HEALTHCARE PROVIDERS)

| Variable | Scale | Scoring | Reliability | Validity |
|--|--|---|--|--|
| Trust in healthcare providers <u>* conceptual definition</u> “The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (Mayer et al., 1995)(p. 712) | <ul style="list-style-type: none"> • Trust in physician (TIP) developed by Anderson and Derrick in 1990 • 11 items | <ul style="list-style-type: none"> • 5-point Likert scale (strongly disagree to strongly agree Items • The total score ranges from 11 to 55 | <ul style="list-style-type: none"> • Cronbach's alphas was 0.90 for DM (Anderson & Dedrick, 1990) patients, 0.84 for Chinese elderly (Simon et al., 2014), and 0.78 in Taiwanese women (Li et al., 2012) • One month test-retest reliability was 0.77 in primary care patients (Thom et al., 1999) • In this study, Cronbach's alpha was 0.82 | <ul style="list-style-type: none"> • Construct validity: Supported by a significant relationship between TIP and satisfaction with physicians in two studies ($r=.62, p<.001$; $r=.73, p<.001$) and TIP and desire for clinician's control ($r=.48, p<.001$) (Anderson & Dedrick, 1990; Thom et al., 1999) • Predictive validity: Trust at baseline predicted self-reported adherence to medication, continuity with the physician, and satisfaction at 6 months (Thom et al., 1999) |

Table VI
THE MEASURES OF THIS STUDY (TRUST IN HEALTHCARE SYSTEM)

| Variable | Scale | Scoring | Reliability | Validity |
|--|--|--|--|--|
| Trust in healthcare system <u>* conceptual definition</u> Attitude or trust/mistrust toward collective health care related organization (Hall, Camacho, Dugan, & Balkrishnan, 2002) | <ul style="list-style-type: none"> • A revised Health Care System Distrust (HCSD) (Shea et al., 2008) • 9 items <u>Two subscales</u> <ol style="list-style-type: none"> 1. Value distrust (5 items, Cronbach's alpha=0.73) 2. Competence distrust (4 items, Cronbach's alpha=0.77) | <ul style="list-style-type: none"> • a 5-point Likert scale (strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree) • The total score ranges from 9 and 45 | <ul style="list-style-type: none"> • Cronbach's alphas was 0.87 in samples with African-Americans and Whites patients (Shea et al., 2008) • In this study, Cronbach's alpha was 0.83 | <ul style="list-style-type: none"> • Construct validity: The value and competence subscale were negatively associated with the Physician Trust Subscale of the Primary Care Assessment Survey ($r=-.30$, $r=-.33$), a global item assessing trust in the health care system ($r=-.42$, $r=-.55$), and a global item assessing general social trust from the General Social Survey ($r=-.35$, $r=-.27$) (Shea et al., 2008) • Construct validity: Factor analysis confirmed a 2 factor structure (Shea et al., 2008; Yang et al., 2011) |

IV. RESULTS

This section describes the results of the study in two sections. Section I describes the descriptive analysis of the demographic characteristics and participants characteristics related to the breast cancer screening. The bivariate analyses are also presented. Section II reports the results of the study by specific aim.

A. Section I

1. Descriptive analysis of demographic and participant characteristics

A convenience sample of 196 Korean American women between 50 to 74 years old participated in the study. Table 7 presents the demographic and descriptive characteristics of the participants. The mean age of the 196 women was 63 ± 6.78 years (range: 50-74 years). More than 75% of KA women lived in US for more than 20 years, with a mean length of stay of 29 ± 11.32 years (range: 2-54 years), and most were naturalized citizens (80%). Seventy five percent of women were married and 59% were educated at the College or higher level. About one-third of women reported household earning above earned 40,000 and 24 % earned less than 25,000 dollars per household. Forty-four percent of women worked either full-time or part-time.

The majority of KA women sampled (85%) had a regular doctor or a regular place they could go for health care, and about 88% responded that the race of their doctors was Korean. Most of KA women sampled (92%) responded that they were able to find a Korean doctor if they wanted and about 80% of the women responded their insurance allowed them to choose the doctor that they preferred. About 93% of KA women had health insurance. Almost 72% of the KA women reported that they were able to receive healthcare where they wanted and 70% of KA women knew where to go for a mammogram that would accept their insurance. About 78% of KA women rated their health as good or better and about 20% of women reported they had a family history of breast cancer (Table 7).

Table VII

DESCRIPTIVE STATISTICS OF TOTAL SAMPLE (N=196)

| Variables | n | % |
|--|--------------|----------|
| Age [M (SD)] [Range] | 62.7 (6.78) | 50-74 |
| 50-59 | 75 | 38.2 |
| 60-69 | 84 | 42.9 |
| 70-75 | 37 | 18.9 |
| Residency in US(yrs)[M (SD)] [Range] | 28.8 (11.32) | 2-54 |
| 0-9 | 13 | 6.6 |
| 10-19 | 34 | 17.4 |
| 20-29 | 50 | 25.5 |
| 30-39 | 62 | 31.6 |
| 40 and above | 37 | 18.9 |
| Immigration status | | |
| Immigrant (Naturalized) | 156 | 79.6 |
| Immigrant (Non-citizen) | 34 | 17.4 |
| Immigrant-Undocumented | 3 | 1.5 |
| Decline to answer | 3 | 1.5 |
| Marital status | | |
| Married | 147 | 75.0 |
| Not married | 49 | 25.0 |
| Employment | | |
| Part-time | 27 | 13.8 |
| Full-time | 60 | 30.6 |
| Not working | 109 | 55.6 |
| Education | | |
| High school or less | 80 | 40.8 |
| College or higher | 116 | 59.2 |
| Income (US\$) | | |
| <10,000 | 18 | 9.2 |
| 10,000-24,999 | 28 | 14.3 |
| 25,000-39,999 | 44 | 22.5 |
| 40,000-54,999 | 22 | 11.2 |
| 55,000 or more | 51 | 26.0 |
| Don't know | 15 | 7.6 |
| Decline to answer | 18 | 9.2 |
| Regular doctor | | |
| Yes | 166 | 84.7 |
| No | 30 | 15.3 |
| Physician race | | |
| Korean | 173 | 88.3 |
| Non-Korean | 23 | 11.7 |
| Able to find Korean physician | | |
| Yes | 181 | 92.4 |
| No | 15 | 7.6 |
| Able to receive care where wanted | | |
| Yes | 141 | 71.9 |
| No | 55 | 28.1 |
| Know where to go for mammogram | | |
| Yes | 138 | 70.4 |
| No | 58 | 29.6 |

Table VII

| DESCRIPTIVE STATISTICS OF TOTAL SAMPLE (N=196) (continued) | | |
|--|-----|------|
| Variables | n | % |
| Insurance coverage of preferred Physician | | |
| Yes | 156 | 79.6 |
| No | 40 | 20.4 |
| Insurance | | |
| Private | 77 | 39.3 |
| Affordable Care Act | 34 | 17.4 |
| Medicare | 19 | 9.7 |
| Medicaid | 12 | 6.1 |
| Medicare/Medicaid | 20 | 10.2 |
| Medicare/Private | 21 | 10.7 |
| No insurance | 13 | 6.6 |
| Health status | | |
| Excellent | 10 | 5.1 |
| Very good | 43 | 21.9 |
| Good | 100 | 51.0 |
| Fair | 36 | 18.4 |
| Poor | 7 | 3.6 |
| Family history of breast cancer | | |
| Yes | 40 | 20.4 |
| No | 156 | 79.6 |

2. Bivariate analysis of demographic and participant characteristics with breast cancer screening

Bivariate analysis was completed using Chi-square and Fisher's exact test. Among KA women who were ever screened in the past, age, length of stay in US, immigration status, marital status, having a regular doctor or regular place for health care, whether they can find a Korean doctor, having insurance that allowed for them to choose the doctor they prefer, whether they can receive care where they wanted, and knowing where to go for a mammogram that would accept their insurance were not independent of each other and are therefore related ($p<.05$). Among KA women who were screened in the past 2 years, length of stay in US, immigration status, having a regular doctor or regular place for health care, having insurance that allowed for them to choose the doctor they prefer, type of insurance, whether they can receive care where they wanted, and knowing where to go for a mammogram that would accept their insurance were not independent of each other and are therefore related ($p<.05$) (Table 8).

Table VIII
DESCRIPTIVE STATISTICS (N=196)

| Variables | Ever screened | | | Screened in past 2 years | | |
|-------------------------|----------------------|--------------------|---------|--------------------------|------------------|---------|
| | Yes n=167 (85.2%) | No n=29 (14.8%) | P-value | Yes n=106 (54%) | No n=90 (46%) | P-value |
| Age | | | | | | |
| 50-59 | 56 (33.5%) | 19 (65.5%) | .001 | 36 (34.0%) | 39 (43.3%) | .256 |
| 60-69 | 80 (47.9%) | 4 (13.8%) | | 51 (48.0%) | 33 (36.7%) | |
| 70-75 | 31 (18.5%) | 6 (20.7%) | | 19 (18.0%) | 18 (20.0%) | |
| Residency in US (yrs) | | | | | | |
| 0-9 | 6 (3.6%) | 7 (24.1%) | .006 | 4 (3.8%) | 9 (10.0%) | .016 |
| 10-19 | 29 (17.4%) | 5 (17.3%) | | 15 (14.2%) | 19 (21.1%) | |
| 20-29 | 42 (25.1%) | 8 (27.6%) | | 24 (22.6%) | 26 (28.9%) | |
| 30-39 | 56 (33.5%) | 6 (20.7%) | | 35 (33.0%) | 27 (30.0%) | |
| 40 and above | 34 (20.4%) | 3 (10.3%) | | 28 (26.4%) | 9 (10.0%) | |
| Immigration status | | | | | | |
| Immigrant (Naturalized) | 145 (86.8%) | 11 (37.9%) | <.001 | 95 (89.6%) | 61 (67.8%) | <.001 |
| Immigrant (Non-citizen) | 19 (11.4%) | 15 (51.7%) | | 10 (9.4%) | 24 (26.7%) | |
| Immigrant-Undocumented | 0 (0%) | 3 (10.4%) | | 0 (0%) | 3 (3.3%) | |
| Decline to answer | 3 (1.8%) | 0 (0%) | | 1 (1.0%) | 2 (2.2%) | |
| Marital status | | | | | | |
| Married | 131 (78.4%) | 16 (55.2%) | .008 | 83 (78.3%) | 64 (71.1%) | .247 |
| Not married | 36 (21.6%) | 13 (44.8%) | | 23 (21.7%) | 26 (28.9%) | |
| Employment | | | | | | |
| Part-time | 22 (13.2%) | 5 (17.3%) | .113 | 10 (9.4%) | 17 (18.9%) | .073 |
| Full-time | 47 (28.1%) | 13 (44.8%) | | 30 (28.3%) | 30 (33.3%) | |
| Not working | 98 (58.7%) | 11 (37.9%) | | 66 (62.3%) | 43 (47.8%) | |
| Education | | | | | | |
| High school or less | 67 (40.1%) | 13 (44.8%) | .634 | 41 (38.7%) | 39 (43.3%) | .509 |
| College or higher | 100 (59.9%) | 16 (55.2%) | | 65 (61.3%) | 51 (56.7%) | |
| Regular doctor | | | | | | |
| Yes | 147 (88.0%) | 19 (65.5%) | .002 | 104 (98.1%) | 62 (68.9%) | <.001 |
| No | 20 (12.0%) | 10 (34.5%) | | 2 (1.9%) | 28 (31.1%) | |

Table VIII
DESCRIPTIVE STATISTICS (N=196) (continued)

| Variables | Ever screened | | | Screened in past 2 years | | |
|--|----------------------|--------------------|---------|--------------------------|------------------|---------|
| | Yes n=167 (85.5%) | No n=29 (14.8%) | P-value | Yes n=106 (54%) | No n=90 (46%) | P-value |
| Income (US\$) | | | | | | |
| <10,000 | 16 (9.6%) | 2 (6.9%) | .290 | 9 (8.5%) | 9 (10.0%) | .514 |
| 10,000-24,999 | 23 (13.8%) | 5 (17.3%) | | 14 (13.2%) | 14 (15.6%) | |
| 25,000-39,999 | 36 (21.6%) | 8 (27.6%) | | 22 (20.7%) | 22 (24.4%) | |
| 40,000-54,999 | 20 (12.0%) | 2 (6.9%) | | 12 (11.3%) | 10 (11.1%) | |
| 55,000 or more | 47 (28.1%) | 4 (13.8%) | | 34 (32.1%) | 17 (18.9%) | |
| Don't know | 10 (6.0%) | 5 (17.2%) | | 6 (5.7%) | 9 (10.0%) | |
| Decline to answer | 15 (9.0%) | 3 (10.3%) | | 9 (8.5%) | 9 (10.0%) | |
| Physician race | | | | | | |
| Korean | 148 (88.6%) | 25 (86.2%) | .709 | 92 (86.8%) | 81 (90.0%) | .487 |
| Non-Korean | 19 (11.4%) | 4 (13.8%) | | 14 (13.2%) | 9 (10.0%) | |
| Able to find Korean physician | | | | | | |
| Yes | 158 (94.6%) | 23 (79.3%) | .004 | 100 (94.3%) | 81 (90.0%) | .255 |
| No | 9 (5.4%) | 6 (20.7%) | | 6 (5.7%) | 9 (10.0%) | |
| Able to receive care where wanted | | | | | | |
| Yes | 125 (74.9%) | 16 (55.2%) | .029 | 86 (81.1%) | 55 (61.1%) | .002 |
| No | 42 (25.1%) | 13 (44.8%) | | 20 (18.9%) | 35 (38.9%) | |
| Know where to go for mammogram | | | | | | |
| Yes | 127 (76.0%) | 11 (37.9%) | <.001 | 92 (86.8%) | 46 (51.1%) | <.001 |
| No | 40 (24.0%) | 18 (62.1%) | | 14 (13.2%) | 44 (48.9%) | |
| Insurance coverage of preferred Physician | | | | | | |
| Yes | 138 (82.6%) | 18 (62.1%) | .011 | 91 (85.8%) | 65 (72.2%) | .018 |
| No | 29 (17.4%) | 11 (37.9%) | | 15 (14.2%) | 25 (27.8%) | |

Table VIII
DESCRIPTIVE STATISTICS (N=196) (continued)

| Variables | Ever screened | | | Screened in past 2 years | | |
|---------------------------------|----------------------|--------------------|---------|--------------------------|------------------|---------|
| | Yes n=167 (85.2%) | No n=29 (14.8%) | P-value | Yes n=106 (54%) | No n=90 (46%) | P-value |
| Insurance | | | | | | |
| Private | 64 (38.3%) | 13 (44.8%) | .190 | 41 (38.7%) | 36 (40.0%) | .010 |
| Affordable Care Act | 29 (17.3%) | 5 (17.2%) | | 15 (14.2%) | 19 (21.1%) | |
| Medicare | 17 (10.2%) | 2 (6.9%) | | 12 (11.3%) | 7 (7.8%) | |
| Medicaid | 10 (6.0%) | 2 (6.9%) | | 7 (6.6%) | 5 (5.6%) | |
| Medicare/Medicaid | 19 (11.4%) | 1 (3.5%) | | 12 (11.3%) | 8 (8.9%) | |
| Medicare/Private | 20 (12.0%) | 1 (3.5%) | | 17 (16.0%) | 4 (4.4%) | |
| No insurance | 8 (4.8%) | 5 (17.2%) | | 2 (1.9%) | 11 (12.2%) | |
| Health status | | | | | | |
| Excellent | 10 (6.0%) | 0 (0%) | .313 | 9 (8.5%) | 1 (1.1%) | .024 |
| Very good | 37 (22.1%) | 6 (20.7%) | | 29 (27.4%) | 14 (15.6%) | |
| Good | 87 (52.1%) | 13 (44.8%) | | 48 (45.3%) | 52 (57.8%) | |
| Fair | 27 (16.2%) | 9 (31.0%) | | 17 (16.0%) | 19 (21.1%) | |
| Poor | 6 (3.6%) | 1 (3.5%) | | 3 (2.8%) | 4 (4.4%) | |
| Family history of breast cancer | | | | | | |
| Yes | 36 (22.6%) | 4 (13.8%) | .338 | 24 (22.6%) | 16 (17.8%) | .400 |
| No | 131 (78.4%) | 25 (86.2%) | | 82 (77.4%) | 74 (82.2%) | |

Note. P-value calculated by Chi-square or Fisher's exact test

B. Section II

1. Levels of breast cancer screening rate, acculturation, cultural beliefs, perceived discrimination in healthcare, trust in healthcare providers, and trust in healthcare system

The levels of breast cancer screening rate is the dependent variables and measured as ever screened in the past and screened in the past 2 years. In this study, about 85% of participants were ever screened in their lifetime. Conversely, only 54% of participants were screened in past 2 years. The open-ended questions were also given to the participants to list the major reasons for not getting a mammogram in the past 2 years. The three common reasons were: (1) because they felt healthy or because they did not have any symptoms (29.9%), (2) because they had no time (17.9%), and (3) because they were busy (13.4%) (Table 9).

Table IX

| REASONS FOR NOT GETTING A MAMMOGRAM DONE IN PAST 2 YEARS (N=67) | | |
|---|----|------|
| Reasons | n | % |
| Feel healthy/no symptoms | 20 | 29.9 |
| No time | 12 | 17.9 |
| Busy | 9 | 13.4 |
| No insurance | 8 | 11.9 |
| Cost | 4 | 6.0 |
| Afraid of exposure to radiation | 4 | 6.0 |
| No family history | 4 | 6.0 |
| Perform self-breast exam | 4 | 6.0 |
| Forgot to have it done | 3 | 4.5 |
| Discomfort when mammogram was done | 3 | 4.5 |

Note. Some participants provided more than one reason

a. Ever screened

There were no differences in acculturation between the ever screened and never screened group. The mean score of acculturation was $1.6 \pm .60$ in ever screened group and $1.6 \pm .52$ in never screened group ($p=0.762$). The overall cultural beliefs mean scores were low, but significantly higher in the never screened group (2.4 ± 2.12 and 3.9 ± 2.72 respectively, $p<.001$). The mean score of perceived discrimination was significantly lower in ever screened group (12.5 ± 4.95) compared to 17.4 ± 7.96 in never screened group ($p<.001$). Trust in healthcare providers was higher in ever screened group (36.3 ± 6.86) compared to 28.7 ± 7.28 in never screened group ($p<.001$). Conversely, distrust in the healthcare system was lower in ever screened group (25.3 ± 5.54) compared to 29.6 ± 7.02 in never screened group ($p<.001$) (Table 10).

b. Screened in past 2 years

Acculturation in the screened group was higher ($1.7 \pm .67$) compared to $1.5 \pm .47$ in not screened group ($p=0.024$). The overall cultural beliefs mean scores were low, but significantly higher in screened group. Cultural beliefs in screened group was lower (2.2 ± 1.99) compared to 3.1 ± 2.50 in not screened group ($p=0.004$). Perceived discrimination was lower in screened group (10.6 ± 3.32) when compared to not screened group (16.2 ± 6.15) ($p<.001$). Trust in healthcare providers was higher in screened group (39.1 ± 5.40) compared to 30.5 ± 6.79 in not screened group ($p<.001$). Conversely, distrust in the healthcare system was lower in the screened in the past 2 years group (22.9 ± 5.54) compared to 29.5 ± 5.71 in never screened group ($p<.001$) (Table 10).

Table X
DESCRIPTIVE STATISTICS (N=196)

| Variables | Ever screened | | | | Screened in past 2 years | | | |
|-------------------------------|----------------|-------|----------------|-------|--------------------------|-------|----------------|-------|
| | Yes | | No | | Yes | | No | |
| | M (SD) | Range | M (SD) | Range | M (SD) | Range | M (SD) | Range |
| Acculturation | 1.6 (.60) | 1-3.8 | 1.6 (.52) | 1-2.9 | 1.7 (.67) | 1-3.8 | 1.5 (.47) | 1-2.9 |
| Cultural beliefs | 2.4 (2.12) | 0-10 | 3.9 (2.74) | 0-8 | 2.2 (1.99) | 0-10 | 3.1 (2.50) | 0-9 |
| Perceived discrimination | 12.5 (4.95) | 7-28 | 17.4 (6.96) | 7-28 | 10.6 (3.32) | 7-23 | 16.2 (6.15) | 7-28 |
| Trust in healthcare providers | 36.3 (6.86) | 19-55 | 28.7 (7.28) | 16-45 | 39.1 (5.40) | 27-55 | 30.5 (6.79) | 16-46 |
| Distrust in healthcare system | 25.3 (5.54) | 11-42 | 29.6 (7.02) | 3-39 | 22.9 (4.31) | 11-32 | 29.5 (5.71) | 13-42 |

2. Predictors of breast cancer screening (mammography) (ever screened and screened within the past 2 years)

It was hypothesized that KA women who have been screened for breast cancer with mammography ever or within the past 2 years (two separate analyses), when compared to KA women who have never been screened or not screened within the past 2 years will have higher levels of acculturation, lower levels of cultural beliefs, lower levels of perceived discrimination in healthcare, higher levels of trust in healthcare providers and higher levels of trust in the healthcare system.

Multiple logistic regressions were completed to identify predictors of breast cancer screening (mammography) (ever screened and screened within the past 2 years). In the regression analysis, age, length of stay in US, acculturation, perceived discrimination, cultural beliefs, trust healthcare providers, and distrust in healthcare providers were entered as continuous variables. Marital status was dichotomized as not married (coded 0) and married (coded1), and education was

dichotomized as high school or less (coded 0) and college or higher (coded 1). Immigration status was dichotomized as non-citizen immigrants (coded 0) and naturalized citizens (coded 1). About 3% of participants either answered as undocumented immigrants or declined to answer and were not include in the regression model. Income was divided into 4 categories and compared to 2016 poverty line (24,999 dollars or less). Health status was dichotomized as fair/poor (coded 0) and good and above (coded1). Dichotomization of variables were based on previous literatures.

a. Ever screened

The overall regression model examining predictors of ever screening was significant (LR $\chi^2=46.79$, $p<.001$). The results revealed that immigration status was a strong predictor of ever screening. The odds of having mammograms among naturalized immigrant women were about 31 times more than those of women who were non-citizen immigrants (OR: 31.38; 95% CI=2.47-52.33). Holding other variables constant, for every point increase in trust in healthcare providers, the odds of having mammogram increased by 24% (OR=1.24; 95% CI=1.04-1.47). Acculturation, cultural beliefs, perceived discrimination, and distrust in healthcare system were not significant predictors of ever screening in this model (Table 11).

Hosmer and Lemeshow's goodness-of-fit test was not significant ($p>.05$) indicating that the models fit the data well. The assumption of checking multicollinearity was met because the VIF values of all variables were less than 10 (mean VIF 1.82), and the values of tolerance were greater than 0.1.

b. Screened in past 2 years

The overall regression model examining predictors of screening in past 2 years was significant (LR $\chi^2=102.15$, $p<.001$). Having regular doctors or having regular places for health care was a strong predictor in this model. The odds of having mammograms among women who had regular doctors or regular places for health care were about 30 times more than those of women who did not have regular doctors or regular places for health care (OR=29.91;95% CI=3.75-238.13). Also, the odds of having mammograms among women who knew where to go for mammogram were about 7 times more than those of women who did not know where to go for a

mammogram (OR=6.49; 95% CI=1.61-26.14). Both trust in healthcare providers and distrust in healthcare system were significant predictors of being screened within the past 2 years. Holding other variables constant, for every point increase in trust in healthcare providers, the odds of having mammogram increased by 14% (OR=1.14; 95% CI=1.01-1.29). Conversely, the odds of having a breast cancer screening decreased by 16% with every point increase in distrust in healthcare system (OR=0.84; 95% CI=0.72-0.99). Acculturation, cultural beliefs, and perceived discrimination were not significant in this model (Table 11).

Hosmer and Lemeshow's goodness-of-fit test was not significant ($p>.05$) indicating the models fit the data well. The assumption of checking multicollinearity was met because the VIF values of all variables were less than 10 (mean VIF 1.82), and the values of tolerance were greater than 0.1.

c. Firth logistic regression

Firth's penalized likelihood approach (Firth logistic regression) is a statistical method to address the issues of small sample size and bias of the parameter estimates. The problem of the maximum likelihood estimation of logistic regression is that it may result in small-sample bias (high odd ratio) and the bias is strongly related to a small sample size in certain cells. Therefore, Firth logistic regressions were performed (King & Zeng, 2001; Williams, 2016). The results were similar to the multiple logistic regression. The major differences were as follows. The odds of having mammograms among naturalized immigrant women were about 10 times more than those of women who were non-citizen immigrants (OR: 9.50; 95% CI=1.73-65.6) in ever screened group. In screened in past 2 years, the odds of having mammograms among women who had regular doctors or regular places for health care were about 14 times more than those of women who did not have regular doctors or regular places for health care (OR=13.50; 95% CI=2.77-113.71), and the odds of having mammograms among women who knew where to go for mammogram women were about 4 times more than those of women who did not know where to go for mammogram (OR=3.59; 95% CI=1.08-12.95) (Table 12).

Table XI
MULTIPLE LOGISCTIC REGRESSION PREDICTING EVER SCREENING AND PAST 2 YEARS

| Variables | Ever screened | | Past 2 years | |
|---|---------------|------------|--------------|--------------|
| | OR | 95% CI | OR | 95% CI |
| Age | 1.02 | 0.89-1.16 | 0.94 | 0.84-1.04 |
| Length of stay in US | 0.93 | 0.84-1.02 | 0.96 | 0.89-1.03 |
| Immigration status (Ref: Non-citizen) Naturalized immigrants | 31.38*** | 2.47-52.33 | 3.54 | 0.53-23.6 |
| Marital status (Ref: Not married) Married | 1.56 | 0.26-9.32 | 1.52 | 0.39-5.97 |
| Education (Ref: High school or less) > High school | 0.28 | 0.05-1.48 | 0.76 | 0.28-2.01 |
| Income (Ref: 24,999 or less) 25,000-39,999 | 5.68 | 0.72-44.58 | 1.33 | 0.31-5.85 |
| 40,000-54,999 | 7.90 | 0.68-92.07 | 0.20 | 0.13-5.07 |
| 55,000 or more | 3.25 | 0.34-14.99 | 0.41 | 0.07-2.27 |
| Work status (Not working) Working | 0.66 | 0.16-2.77 | 0.64 | 0.22-1.97 |
| Regular doctor/place (Ref: No) Yes | 2.23 | 0.33-14.99 | 29.91*** | 3.75-238.13 |
| Physician race (Ref: non-Korean) | 0.20 | 0.15-7.54 | 1.33 | 0.24-7.49 |
| Finding Korean doctor | 3.82 | 0.33-14.99 | 0.78 | 0.06-9.47 |
| Insurance (no insurance) | 0.65 | 0.04-10.17 | 25.81 | 0.69-1098.59 |

Table XI
MULTIPLE LOGISCTIC REGRESSION PREDICTING EVER SCREENING AND PAST 2 YEARS (continued)

| Variables | Ever screened | | Past 2 years | |
|--|-----------------------------------|------------|------------------------------------|------------|
| | OR | 95% CI | OR | 95% CI |
| Insurance coverage of preferred doctor | 0.69 | 0.04-13.26 | 0.19 | 0.03-1.29 |
| Know where to go for mammogram | 3.58 | 0.63-20.16 | 6.49*** | 1.61-26.14 |
| Health status (Ref: Fair/poor) | 0.64 | 0.10-4.08 | 0.66 | 0.14-3.06 |
| Family history | 1.96 | 0.27-13.57 | 0.95 | 0.26-3.44 |
| Acculturation | 1.04 | 0.66-1.18 | 1.09 | 1.00-1.20 |
| Cultural beliefs | 0.95 | 0.66-1.38 | 1.08 | 0.84-1.40 |
| Perceived discrimination | 0.99 | 0.83-1.19 | 0.96 | 0.84-1.40 |
| Trust in healthcare providers | 1.24* | 1.04-1.47 | 1.14* | 1.01-1.29 |
| Distrust in healthcare system | 1.18 | 0.99-1.41 | 0.84* | 0.72-0.99 |
| Model fit | R2=0.39, Chi-Square=46.79, p<.001 | | R2=0.47, Chi-Square=102.15, p<.001 | |

Note. OR=odd ratio; CI=confidence interval
 $p<.01^*$, $p<.001^{***}$

Table XII
FIRTH LOGISTIC REGRESSION PREDICTING EVER SCREENING AND PAST 2 YEARS

| Variables | Ever screened | | Past 2 years | |
|---|---------------|------------|--------------|-------------|
| | OR | 95% CI | OR | 95% CI |
| Age | 1.03 | 0.93-1.15 | 0.94 | 0.85-1.03 |
| Length of stay in US | 0.95 | 0.88-1.03 | 0.97 | 0.90-1.03 |
| Immigration status (Ref: Non-citizen) Naturalized immigrants | 9.50*** | 1.73-65.6 | 2.97 | 0.52-17.2 |
| Marital status (Ref: Not married) Married | 1.33 | 0.29-5.77 | 1.24 | 0.34-4.17 |
| Education (Ref: High school or less) > High school | 0.42 | 0.09-1.54 | 0.89 | 0.33-2.04 |
| Income (Ref: 24,999 or less) 25,000-39,999 | 3.03 | 0.61-19.0 | 1.24 | 0.33-4.80 |
| 40,000-54,999 | 3.28 | 0.52-29.11 | 0.83 | 0.16-4.09 |
| 55,000 or more | 1.92 | 0.32-12.38 | 0.46 | 0.09-2.05 |
| Work status (Not working) Working | 0.75 | 0.23-2.47 | 0.70 | 0.25-1.84 |
| Regular doctor/place (Ref: No) Yes | 1.60 | 0.31-7.77 | 13.50*** | 2.77-113.71 |
| Physician race (Ref: non-Korean) | 0.39 | 0.03-2.69 | 1.34 | 0.30-6.24 |
| Finding Korean doctor | 2.28 | 0.31-16.84 | 0.63 | 0.07-5.46 |
| Insurance (no insurance) | 0.59 | 0.04-5.50 | 9.30 | 0.52-312.62 |

Table XII
FIRTH LOGISTIC REGRESSION PREDICTING EVER SCREENING AND PAST 2 YEARS (continued)

| Variables | Ever screened | | Past 2 years | |
|---|---------------|------------|--------------|------------|
| | OR | 95% CI | OR | 95% CI |
| Insurance coverage of preferred doctor | 1.00 | 0.07-10.8 | 0.16 | 0.04-1.25 |
| Able to receive healthcare where wanted | 1.01 | 0.14-6.11 | 1.93 | 0.50-7.47 |
| Know where to go for mammogram | 2.66 | 0.65-20.16 | 3.59** | 1.08-12.95 |
| Health status (Ref: Fair/poor) | 0.76 | 0.15-3.16 | 0.85 | 0.20-3.37 |
| Family history | 1.56 | 0.36-9.09 | 0.95 | 0.26-3.44 |
| Acculturation | 1.03 | 0.93-1.15 | 1.07 | 0.99-1.16 |
| Cultural beliefs | 0.93 | 0.70-1.29 | 1.08 | 0.87-1.37 |
| Perceived discrimination | 1.00 | 0.86-1.17 | 0.96 | 0.84-1.40 |
| Trust in healthcare providers | 1.16** | 1.02-1.39 | 1.11** | 1.00-1.25 |
| Distrust in healthcare system | 1.11 | 0.97-1.30 | 0.87** | 0.76-0.99 |

Note. OR=odd ratio; CI=confidence interval
 $p<.05^{**}$, $p<.001^{***}$

3. **Indirect effect of perceived discrimination, cultural beliefs, and acculturation on breast cancer screening (mammography) through trust**

The mediating effects were examined using bootstrapping by PROCESS model 4 developed by Hayes (2013). First, the combined effects of trust in healthcare providers and distrust in healthcare system were examined. Then, the effect of trust in healthcare providers and distrust in healthcare effects were examined separately.

a. **Ever screened**

The direct and indirect effects of perceived discrimination, cultural beliefs, and acculturation on mammography through trust in healthcare providers and distrust in healthcare system were not significant (Figure 2 to Figure 10).

b. **Screened in past 2 years**

The direct effect of perceived discrimination was not significant ($r = -.05$, 95% CI = $-.17-.07$). However, the indirect effect of perceived discrimination in healthcare on screening in past 2 years through trust (trust in healthcare provider and distrust in healthcare system combined) was significant ($r = -.18$, 95% CI = $-.27--.03$). Specifically, the higher levels of perceived discrimination negatively impacted trust in health care providers ($b = -.78$, $p < .001$), and positively impacted distrust in healthcare system ($b = .60$, $p < .001$) (Figure 2). In turn, trust in healthcare providers positively impacted screening ($b = .11$, $p < .05$) and distrust in healthcare system negatively impacted screening ($b = -.14$, $p < .05$) (Figure 11-13).

The direct effect of cultural beliefs was not significant ($r = -.05$, 95% CI = $-.22-.22$). However, indirect effects of cultural beliefs on screening in past 2 years through trust (trust in healthcare provider and distrust in healthcare system combined) was significant ($r = -.21$, 95% CI = $-.41--.02$). Specifically, the higher levels of cultural beliefs negatively impacted trust in health care providers ($b = -.86$, $p < .001$), and positively impacted distrust in healthcare system ($b = .65$, $p < .01$) (Figure 3). In turn, trust in healthcare providers was positively associated with screening ($b = .12$, $p < .05$), and distrust in healthcare system was negatively associated with screening ($b = -.15$, $p < .05$) (Figure 14-16).

Acculturation had a direct effect on screening ($r=.10$, 95% CI=.003-.190).

However, the indirect effect of acculturation on screening in past 2 years through trust (trust in healthcare provider and distrust in healthcare system combined) was not significant ($r=-.008$, 95% CI=-.08- .06).

The results remained similar when trust in healthcare providers and distrust in healthcare systems were examined separately. Acculturation had direct effect on screening but no indirect effect through neither trust in health care provider and distrust in healthcare system (Figure 17-19).

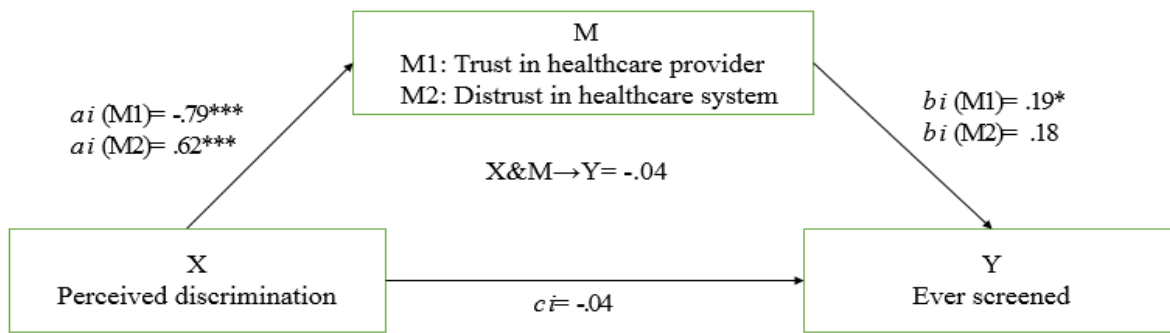


Figure 2. The mediating effect of trust in healthcare providers and distrust in healthcare system between perceived discrimination and ever screened

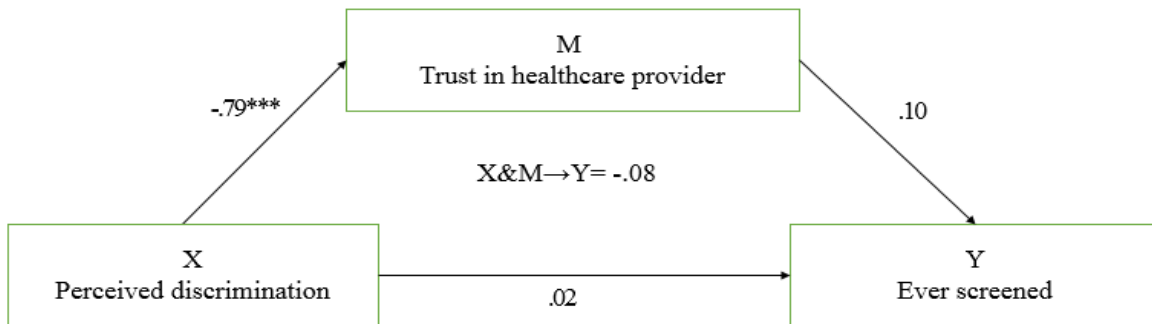


Figure 3. The mediating effect of trust in healthcare providers between perceived discrimination and ever screened

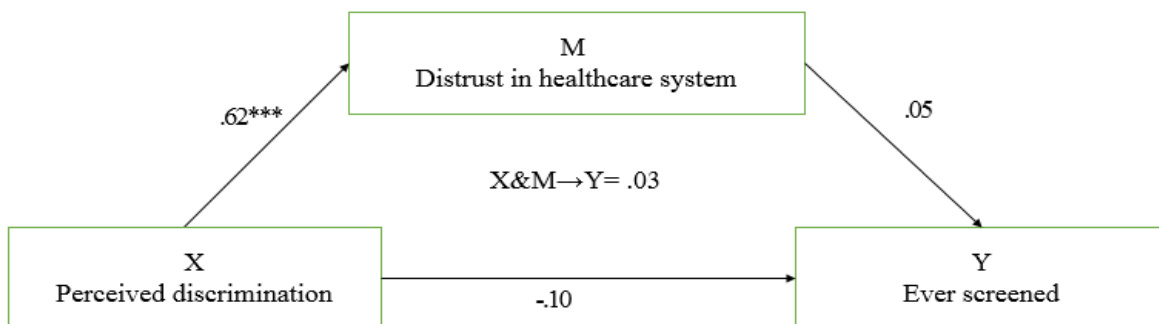


Figure 4. The mediating effect of distrust in healthcare system between perceived discrimination and ever screened

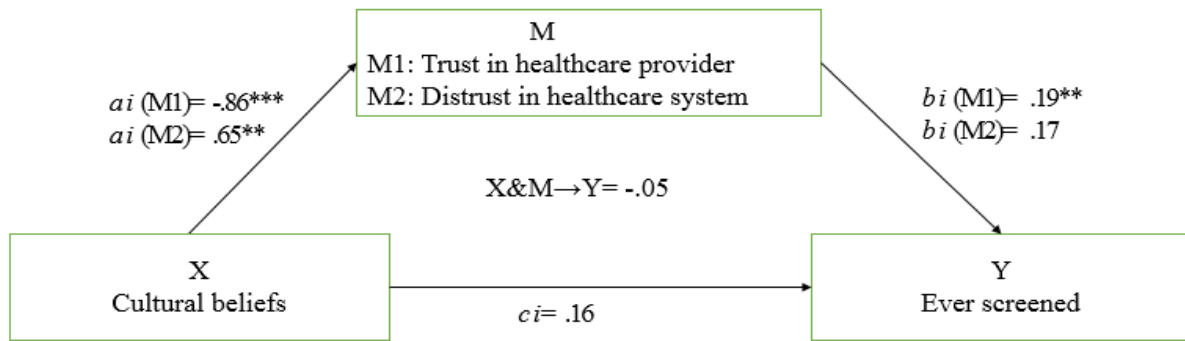


Figure 5. The mediating effect of trust in healthcare providers and distrust in healthcare system between cultural beliefs and ever screened

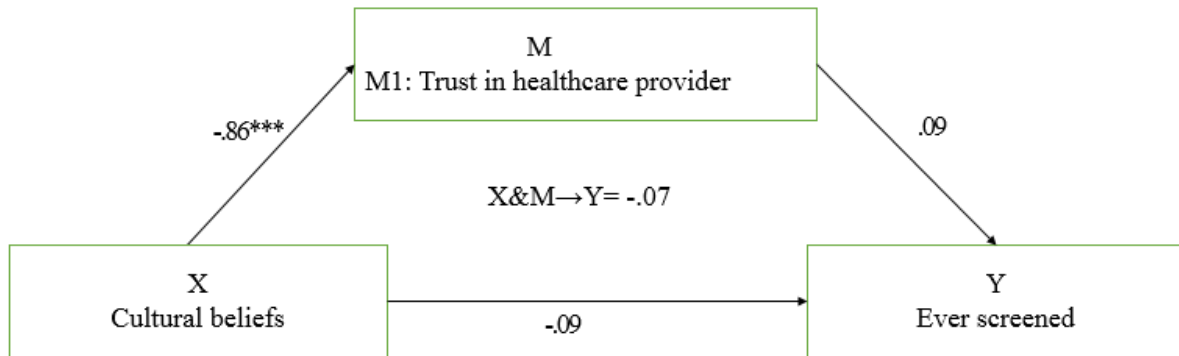


Figure 6. The mediating effect of trust in healthcare providers between cultural beliefs and ever screened

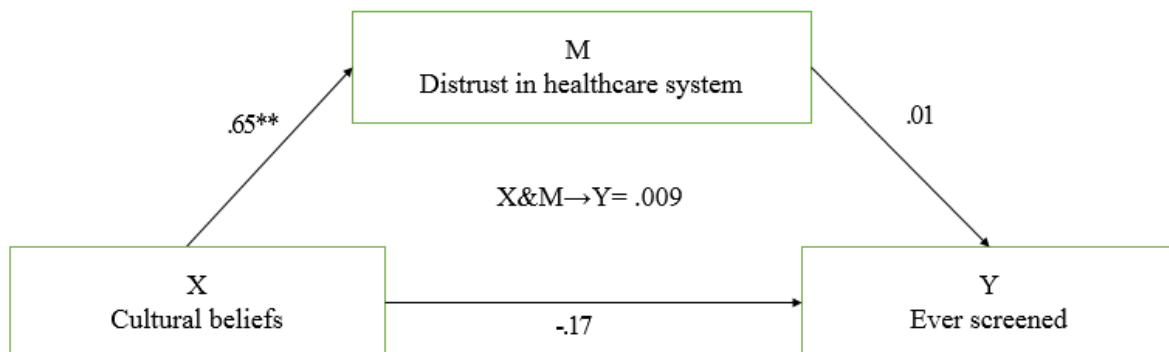


Figure 7. The mediating effect of distrust in healthcare system between cultural beliefs and ever screened

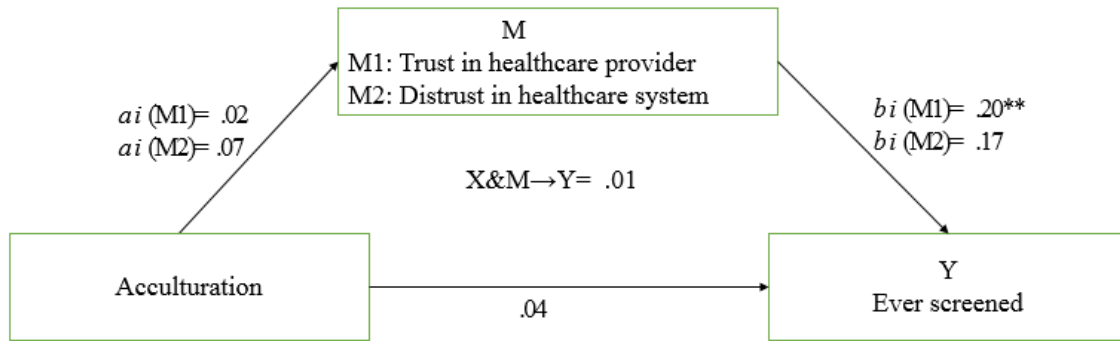


Figure 8. The mediating effect of trust in healthcare providers and distrust in healthcare system between acculturation and ever screened

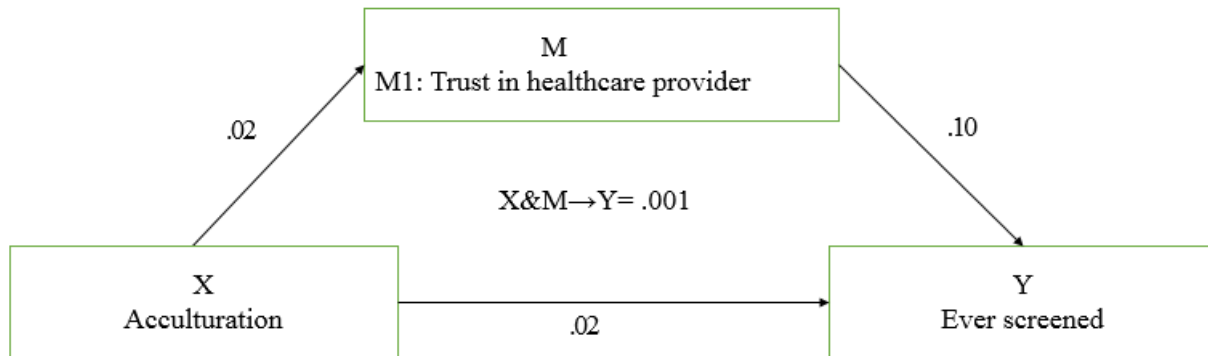


Figure 9. The mediating effect of trust in healthcare providers between acculturation and ever screened

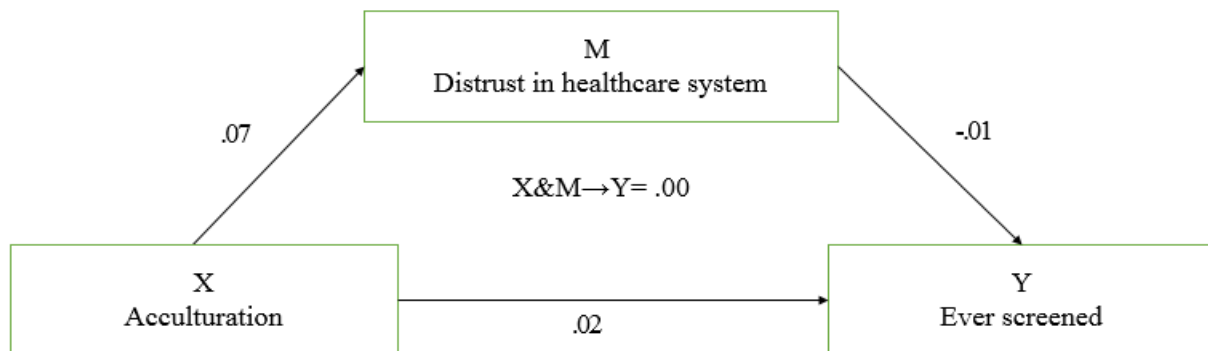


Figure 10. The mediating effect of distrust in healthcare system between acculturation and ever screened

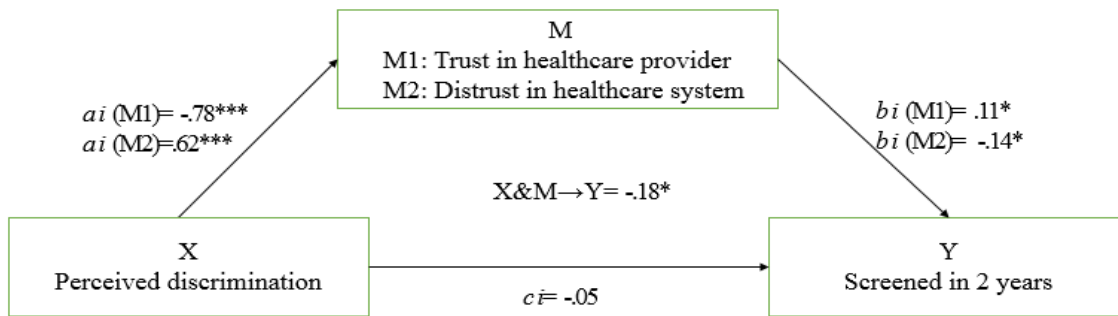


Figure 11. The mediating effect of trust in healthcare providers and distrust in healthcare system between perceived discrimination and screening in 2 years

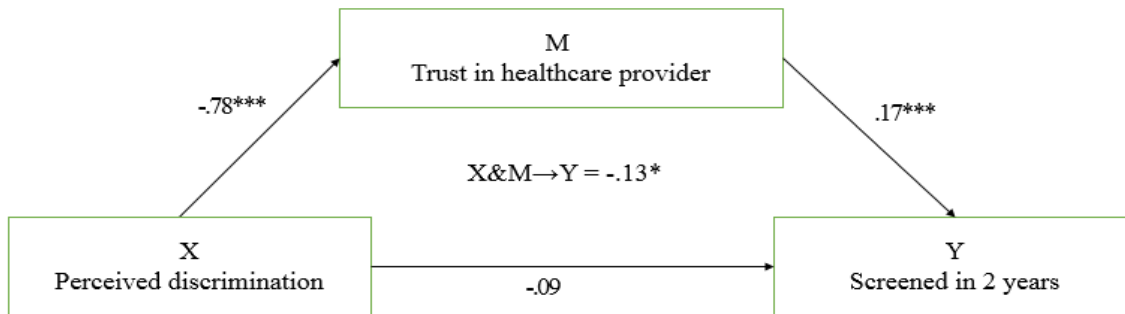


Figure 12. The mediating effect of trust in healthcare providers between perceived discrimination and screening in 2 years

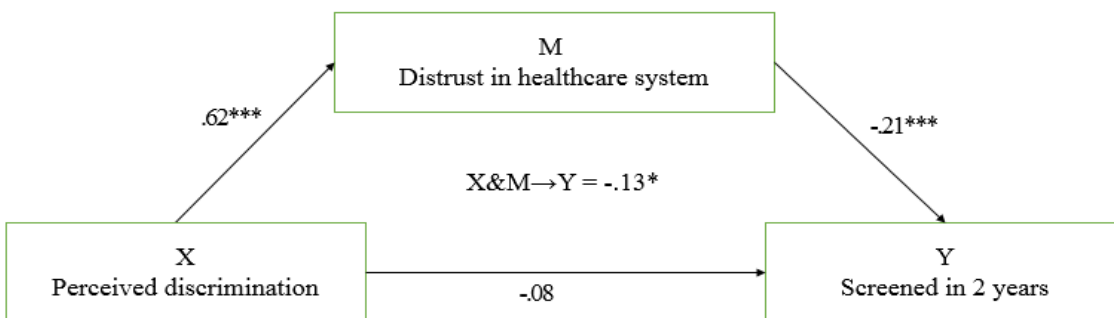


Figure 13. The mediating effect of distrust in healthcare system between perceived discrimination and screening in 2 years

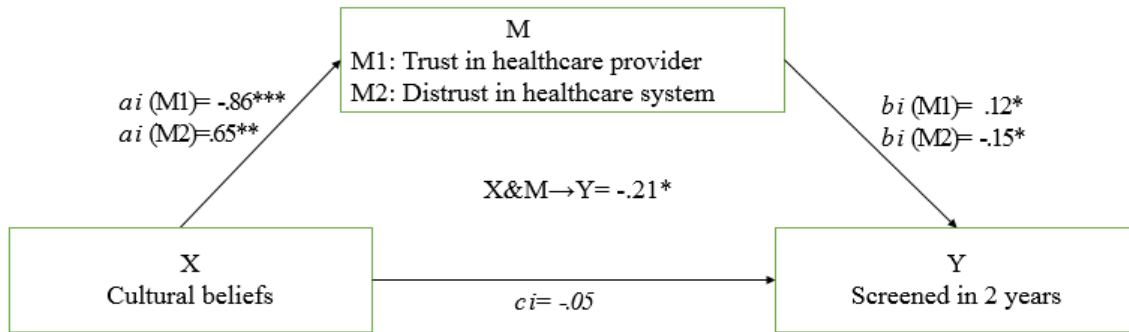


Figure 14. The mediating effect of trust in healthcare providers and distrust in healthcare system between cultural beliefs and screening in 2 years

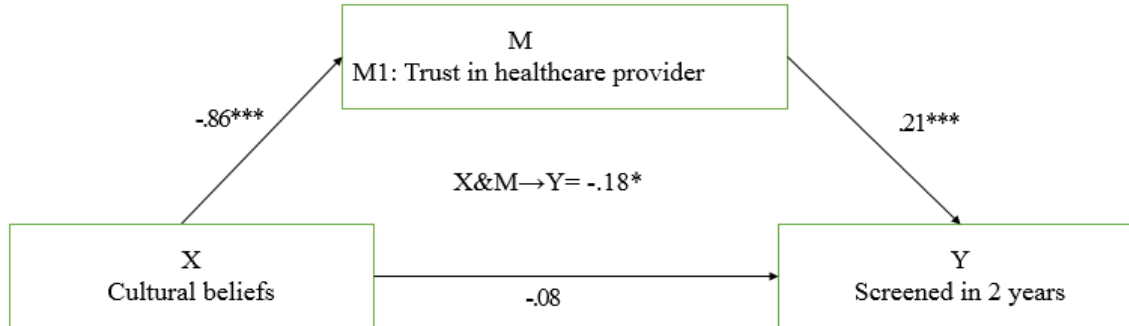


Figure 15. The mediating effect of trust in healthcare providers between cultural beliefs and screening in 2 years

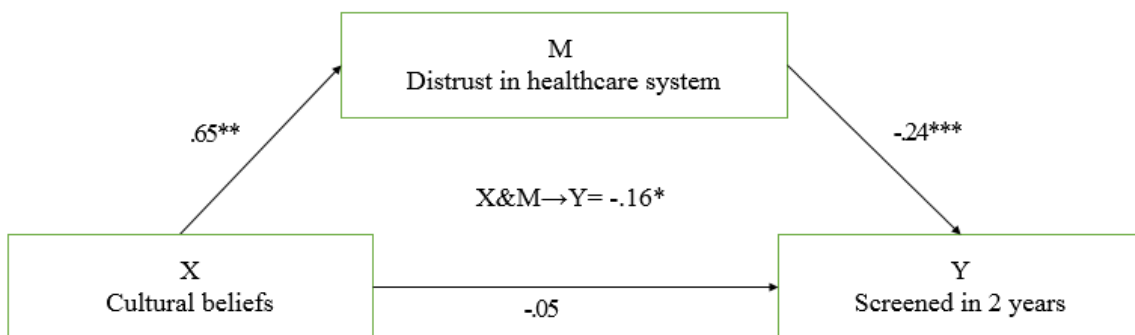


Figure 16. The mediating effect of distrust in healthcare system between cultural beliefs and screening in 2 years

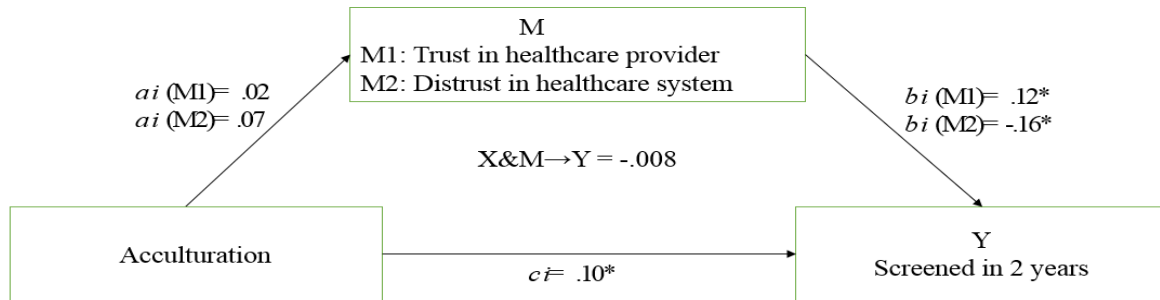


Figure 17. The mediating effect of trust in healthcare providers and distrust in healthcare system between acculturation and screening in 2 years

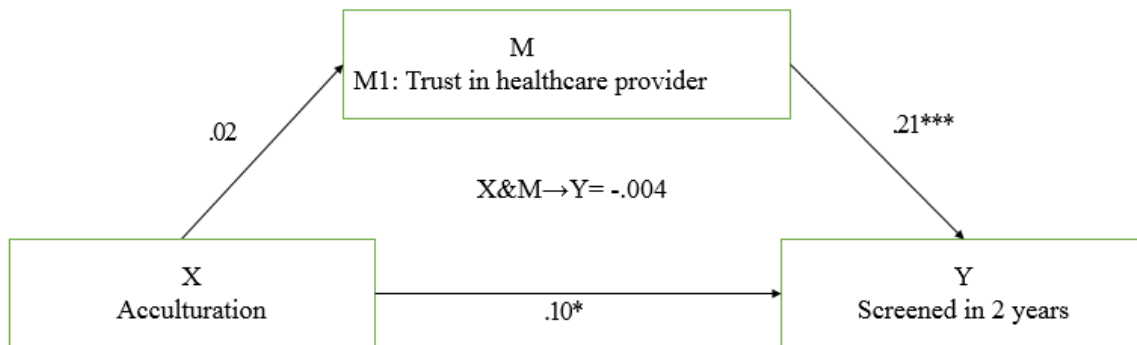


Figure 18. The mediating effect of trust in healthcare providers between acculturation and screening in 2 years

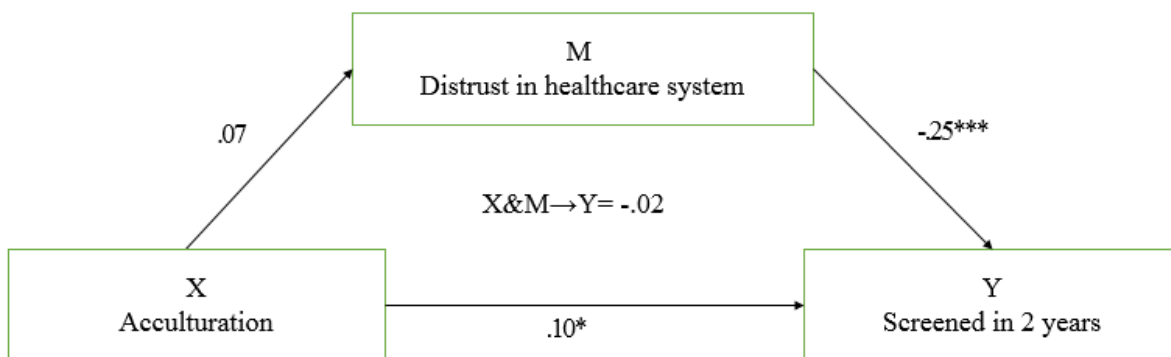


Figure 19. The mediating effect of distrust in healthcare system between acculturation and screening in 2 years

V. DISCUSSION

The purpose of this study was to examine the influence of perceived discrimination, trust in healthcare providers, and trust in healthcare system on breast cancer screening adherence (mammography) among KA women aged 50 to 74 years. This chapter discusses overview of major findings in order of study aims. Study limitations and implications of the study are also presented. The specific aims of this study were to: 1) Describe the levels of breast cancer screening rate, acculturation, cultural beliefs, perceived discrimination in healthcare, trust in healthcare providers, and trust in the healthcare system among KA women aged 50 to 74 years, 2) Identify predictors of breast cancer screening (mammography) (ever screened and screened within the past 2 years) in KA women, and 3) Examine the indirect (mediation) effect of perceived discrimination and cultural beliefs on breast cancer screening through trust.

The major findings from this study were that (1) women who were US citizens and who had higher trust in healthcare providers were more likely to be ever screened; (2) having regular doctors or places for healthcare, knowing where to go for mammogram, higher trust in healthcare providers, and lower distrust in healthcare system were identified as predictors of being screened in the past 2 years; and (3) perceived discrimination and cultural beliefs had indirect effect on breast cancer screening in past 2 years through trust in healthcare providers and trust in healthcare system. To my knowledge, this is the first study to assess the level of perceived discrimination in healthcare and trust in healthcare context and examine the effects of perceived discrimination and trust on breast cancer screening adherence among KA women. These study findings provide new information on perceived discrimination, trust in healthcare providers and healthcare system and its relation to breast cancer screening adherence in Korean American women.

A. **Breast screening rate in KA women**

Breast cancer screening can detect cancers at an earlier stage when treatment options are available and reduce breast cancer mortality (de Koning, 2003). Currently, biennial mammography is the only recommended screening method for breast cancer for women aged 50 to 74 years (ACS, 2016; Siu &

USPSTF, 2016). Therefore, breast cancer screening rate was measured by mammography in this study. The screening rates among KA women reported in the literature have increased steadily. For example, the rate of ever screening was reported as low as 10% in 1998 (Kim et al, 1998) and shown to be high as 83% in 2009 (Eun, Lee, Kim, & Fogg, 2009). In our sample, the rate of ever screening was higher compared to previous studies. About 85% of KA women were ever screened in our study. This result was also higher than the recent study done KA women in Illinois that reported 75% of ever screening rate (Lee et al., 2016). One possible explanation is that our study sample consisted of KA women aged between 50 to 74 years old compared to 40 and above in most previous studies. The mean age of women in this study was 62.7 compared to 45.0 to 55.3 in previous studies (Choi et al., 2010; Lee et al., 2016; Lee, Stange, & Ahluwalia, 2014; Lee et al., 2012). As women get older, they have had more time to be screened at least few times in their life. The evidence also supports that older women are more likely to be screened compared to younger women (Choi et al., 2010; Juon, Kim, Shankar, & Han, 2004; Lee et al., 2014).

Contrary to the high ever-screening rate, the rate of screening in the past 2 years was low in this study (54%). This finding is consistent with previous studies that revealed low screening rates in the past 2 years among KA women (Choi et al., 2010; Kagawa-Singer et al., 2007; Pourat, Kagawa-Singer, Breen, & Sripipatana, 2010). This rate is also lower than Asian Americans (68%) (ACS, 2016), and the overall U.S. population (72%) (ACS, 2016). Moreover, the screening rates among KA women appeared to be far below the Healthy people 2020 goal of 81.1% and place KA women at risk for detecting breast cancer in later stages. Several interventions were tested incorporating acculturation level, low health beliefs and knowledge on breast cancer screening in KA women (Heo & Braun, 2014; Lee, 2015), and unfortunately the breast cancer screening rate still remains low. The consistent findings of low breast cancer screening rates for KA women may indicate that there may be important factors contributing to breast cancer screening other than socio-demographic, acculturation, access to care, and health belief variables that have been identified in previous studies with KA women.

B. Levels of acculturation, cultural beliefs, perceived discrimination in healthcare, trust in healthcare providers, and trust in the healthcare system

1. Acculturation

The overall mean score of acculturation (language preference at home/work, language preference in media, and preferred ethnicity of individuals in social relations) was low ($1.59 \pm .59$). This score is similar to the study of Choi and Reed (2011) that revealed the average score of 1.56 among KA with type 2 diabetes. According to Marin et al. (1987) who developed the original acculturation scale for Hispanics (SASH), people scoring less than 2.99 are considered less acculturated and more than 2.99 are considered more acculturated. In this sample, the majority of participants scored less than 2.99 indicating lower acculturation. One important point to note is that the average length of stay in US among the study sample was high (28.8 ± 11.32). The length of stay in US has been used as a proxy measure for acculturation in studies with Asian Americans including Korean Americans. However, the length of stay in US may not represent the accurate measures of acculturation as evidenced by this study. One possible explanation for the discrepancy between acculturation score and the length of stay in US may be due to the fact that the samples were recruited only from Korean Churches and included women who maintain close ties to Korean cultural values. The mean score of acculturation in screened and not screened groups were similar in both ever screened and screened in past 2 years in this study, and thus acculturation may not be related to screening among KA women.

2. Cultural beliefs

In this study, the overall cultural beliefs mean score was low (2.6 ± 2.28) compared to the study of Middle Eastern Muslims (4.0 ± 2.9), South Asian Muslims (5.0 ± 3.2) and Latina women (3.4 ± 3.7) (Hasnain, Menon, Ferrans, & Szalacha, 2014; Tejeda, Gallardo, Ferrans, & Rauscher, 2016). The low cultural beliefs score can be partially explained by high education levels. In this study, about 60% of women had college or higher level of education (94% of women had high school or higher education) and relatively long length of stay in US (28.8 ± 11.32) which may indicate that participants

were familiar with Western culture. Moreover, the internal consistency of the translated cultural beliefs scale was .65. Further studies are needed to assess cultural beliefs, to confirm the study findings, and examine the psychometric properties of cultural beliefs scale among Korean American women.

3. Perceived discrimination in healthcare

Investigators in previous studies did not report the mean values for the perceived discrimination in healthcare scale. However, Peek et al. (2011) reported mean values of each item that ranged from $1.33 \pm .56$ to $1.99 \pm .90$ among 74 African Americans, with lower score indicating lower perceived discrimination in healthcare setting. In this study, the mean values of each specific item were higher and ranged from $1.66 \pm .97$ to 2.15 ± 1.01 . The result may indicate that Korean American women perceive higher discrimination in healthcare setting compared to African Americans.

In Korean Americans, perceived discrimination in healthcare settings has not been studied. However, Bernstein et al. (2011) reported that the mean score of the 9-item version of Everyday Discrimination Scale was 15.3 ± 7.0 compared to 13.2 ± 5.55 in this study. Of note, Bernstein used the 9-item Everyday Discrimination Scale that included two additional items that were not associated with healthcare. The mean score may have been higher in Bernstein's study because of the experience of discrimination in everyday life. More studies are needed to assess the levels of perceived discrimination in healthcare settings and its relationship to health behaviors among Korean Americans.

4. Trust in healthcare providers

The mean score of trust in healthcare providers was lower in this sample (35.2 ± 7.42) than in 1,111 coronary artery disease out-patients (43.54 ± 6.32) (Kayanihil et al, 2009), 119 newly diagnosed cancer patients (97 breast, 22 colorectal) (43.5 ± 7.3) (Mainous et al, 2004), Chinese elderly (40.5 ± 6.2) (Simon et al, 2014), and in Taiwanese women (40.53 ± 5.73) (Li, 2012). The lower level of trust in healthcare providers can be explained by some of the demographic variables. This sample of women were relatively highly educated women. Previous research has shown that higher education was associated with lower level of trust in healthcare providers in Chinese elderly (60 and older) (Simon et al, 2014) and males tended to report higher trust in healthcare providers (Benjamins, 2006). However, more studies are

needed to examine the predictors of trust in healthcare providers among Korean American women.

5. Trust in healthcare system

In a study of 236 (144 African Americans, 92 whites) adults treated in primary care practices or the emergency department of a large, urban Mid-Atlantic health system, the overall mean score distrust in healthcare system was 25.2 (SD not reported) and was higher in African Americans (25.8) as compared to 24.1 in Whites (Armstrong et al., 2008). In our study, the overall mean score of distrust in the healthcare system was 25.9 ± 5.96 which was similar to African Americans in the study of Armstrong et al. (2008). Other studies that focused on discrimination in the healthcare system were identified but used different measures. Moreover, there was no study assessing distrust level in Asian Americans as well as in Korean Americans. Further studies are needed to assess the level of distrust in healthcare system using unified measures.

C. Predictors of breast cancer screening

A range of factors have been shown to increase breast cancer screening among KA women. In this study, we examined the influence of socio-demographic characteristics, access to healthcare, acculturation, cultural beliefs, perceived discrimination, trust in healthcare providers, and trust in the healthcare system on ever screening and screening in past 2 years.

1. Ever screening

Although the influence of immigration status on cancer screening had been rarely studied with the Korean American population, being a citizen has been a consistent predictor of cancer screening in other immigrant populations (Alba, Hubbell, McMullin, Sweningson, & Saitz, 2005; Echeverria & Carrasquillo, 2006; Khadilkar & Chen, 2013; Reyes & Miranda, 2015). Consistent with previous research, KA women who were US citizens were about 10 times more likely to be ever screened compared to non-citizens in this study (OR: 9.50; 95% CI=1.73-65.6). A number of factors may explain the relationship between being a U.S. citizen and breast cancer screening. One possible explanation is that women who are US citizens are more likely to reside in US for longer time, and thus more likely to be familiar with US health system and became aware of preventive screening guidelines. Previous research

also reported that the relationship between being a US citizen and cancer screening is closely linked to access to care including having insurance and usual source of care (Alba et al., 2005; Echeverria & Carrasquillo, 2006). In this study, over 90% of women were insured and about 85% of women had a usual source of care. However, these factors were only found to be significant in bivariate analysis, but not significant factors in logistic regression when other variables were controlled.

Trust in healthcare providers has been identified as a significant factor influencing cancer screening adherence (Mainous et al., 2004; Musa et al., 2009; O'Malley et al., 2004). However, the cancer screening adherence was limited to recent screening (within 2-3 years) and did not examine the influence of trust in ever screening. In this study, trust in healthcare providers was found to be a significant factor influencing both ever screening and screened in past 2 years. Cancer screening is usually recommended by primary healthcare providers during routine visits and thus patients are more likely to have screening done when trusted providers recommend cancer screening. Trust in healthcare providers is a fairly new concept and never been studied with Korean American women. Future study should be replicated in different settings or areas to confirm the study results.

2. Screened in past 2 years

Consistent with previous reports, access to health care was a strong predictor for breast cancer screening (Lee et al., 2006, Lee et al., 2016). In this study, women who had a usual source of care (regular doctor/regular place for healthcare) and who knew where to go for a mammogram were significantly more likely to engage in breast cancer screening. Research supports that poor access to healthcare providers is the most important reason for patients not to have cancer screening (Schueler, Chu, & Smith-Bindman, 2008). If women have a usual source of healthcare, they are more likely to be reminded of and referred for mammogram screening. Healthcare providers should be educated on the currently guidelines of breast cancer screening and should recommend the screening to their patients accordingly.

Surprisingly, having insurance was not a predictor of breast cancer screening in this study. It was expected that most KA would have insurance coverage due to The Patient Protection and

Affordable Care Act of 2010. In fact, about 93% of participants were insured, about 17% of women were insured with Affordable Care Act Plan, and the majority of women stated that they did not have any copayment or that copayment was not a barrier to have breast cancer screenings. When women were asked to list reasons for not having a mammogram done in the past 2 years, about 30% of women stated that they felt healthy or had no symptoms of breast cancer, and about 31% of women stated that they had no time or they were busy. Lack of knowledge about breast cancer screening guidelines may be a more important factor contributing to low breast cancer screening among KA women than having insurance and this may be the modifiable factor where KA women may benefit from having education programs of breast cancer screening.

In this study, perceived discrimination in healthcare was not a direct predictor of screening. The relationship between perceived discrimination and cancer screening had been inconsistent in the literature. Several authors criticized that one reason for the inconsistency could be due to the measurement issue that general measures of discrimination (e.g. everyday experience of discrimination) matter more in predicting delay or non-receipt of medical care and cancer screening compared to discrimination in healthcare (Benjamins, 2012; Burgess, Ding, Hargreaves, van Ryn, & Phelan, 2008; Casagrande, Gary, LaVeist, Gaskin, & Cooper, 2007). Future studies may include multiple measures of discrimination to examine how these measures affect the breast cancer screening among KA women. Another reason could be due to a number of healthcare utilization and exposure to discrimination. People who utilize healthcare more frequently have more opportunities to be exposed to discriminatory experience in healthcare. The possible association between the number of healthcare utilization and the level of perceived discrimination is unknown in this study and may need to be explored in the future studies. A pathway how perceived discrimination may affect the breast cancer screening should also be considered. Although perceived discrimination did not have direct effect on breast cancer screening in this study, there is a possibility that participants who perceived more discrimination trust healthcare providers/system less and are less willing to engage in screening behaviors. This pathway was confirmed and discussed later in this section.

The positive patient-provider interaction is a cornerstone to build trust and may lead to improvement in healthcare utilization including breast cancer screening. In fact, current literature supports that patients delay or miss appointments, and are not compliant with preventive screenings when they have little trust in their provider (Hammond, 2010; Mollborn, Stepanikova, & Cook, 2005; Musa et al., 2009; O'Malley et al., 2004). In this study, KA women with higher levels of trust in healthcare providers were more likely to be adherent to breast cancer screening. Increasing trust between patients and healthcare providers is an important way to promote the cancer screening adherence. Trusting relationships create positive environment that promotes communication and therefore recommendation for preventive cancer screening are more likely to be provided and discussed. Trust in healthcare providers has been rarely studied with Korean Americans. Understanding facilitators of trust can better inform the design of interventions for this population with the ultimate goal of improving breast cancer screening.

Consistent with previous research related to trust/distrust in healthcare system and cancer screening adherence in other minorities, participants with higher distrust in healthcare systems were less likely to have breast cancer screening done in this study. Many Korean Americans believe that it is very hard to make an appointment with healthcare providers, do not like the fact that they cannot have all tests or screening done in one place, and believe healthcare is very expensive whereas in Korea you are able to have everything done at one place with easy appointment with less cost. The factors affecting distrust in the healthcare system is unknown with KA. Qualitative studies to explore and understand specific reasons for distrust in healthcare system would be beneficial to develop interventions to decrease distrust in healthcare system among KA women.

D. The mediating effect of trust in healthcare providers and trust in healthcare system

To better understand the mechanism of cultural factors (perceived discrimination, cultural beliefs, acculturation), psychological factors (trust in healthcare providers and trust in healthcare system), and health behavior (breast cancer screening) according to our proposed conceptual framework, mediation analysis was performed using PROCESS bootstrapping. We found no significant mediation role of trust

in ever screening model. Since most women had been screened at least once, the lack of trust may not have been as prevalent. Conversely, trust played as a mediator among women who were screened in past 2 years.

We hypothesized earlier that perceived discrimination in healthcare would have an indirect effect on mammography through trust in the healthcare provider and trust in healthcare system. The results of our mediation analysis provide evidence to support this hypothesis. Discriminatory experiences in the healthcare settings were associated with lower trust level, and in turn lower trust levels were associated with lower breast cancer screening adherence. Our finding is consistent with previous findings that trust may be an important factor explaining the relationship between discrimination and health in other minorities (Cuffee et al., 2013; Haywood et al., 2014). Korean Americans may experience problems with the interpersonal quality of care from healthcare providers, and these problems may have influenced trust in the healthcare providers and further healthcare system as a whole. In this study, participants who were not screened in past 2 years reported significantly higher discrimination score than who were screened (16.2, 10.6, $p < .001$), and may have experience higher level of discrimination compared to other minorities. This perceived level of discrimination was significantly associated with lower trust level in the model. Our study further adds new knowledge by providing the mechanism of the indirect role of trust in improving breast cancer screening. Trust is a possibly a modifiable factor and if we can improve trust to the optimal level, breast cancer screening adherence may increase. However, this study is the probably the first study that assess and examine the trust among Korean American population and may only provide preliminary overview of this population. Further studies are warranted to confirm the study results.

We also hypothesized that cultural beliefs would have an indirect effect on mammography through trust in the healthcare provider and trust in healthcare system. The results of our mediation analysis provide evidence in support of our hypothesized model, suggesting that higher cultural beliefs are associated with lower trust level, and in turn lower trust levels were associated with lower breast cancer screening adherence. Previously, several interventions were done incorporating the cultural beliefs, such as embarrassment, lack of preventive health orientation, and fatalism in KA women, but shown to be

unsuccessful. This may indicate the cultural beliefs may not be easily modifiable. Yet, trust plays an important role in between cultural beliefs and breast cancer screening as evidenced by the results of this study which may be an important area that can be modified and improved with interventions that increase trust in healthcare providers and healthcare settings.

E. Strengths and Limitations

To the best of our knowledge, this study is the first research to describe the levels of perceived discrimination in healthcare settings, trust in healthcare, and trust in healthcare system and examining its relationships to breast cancer screening adherence in Korean American women. Moreover, key covariates were included and the indirect role of trust was examined based on a theoretical framework and comprehensive literature reviews. Unlike most previous studies that included KA women age between 40 and above, our study included KA women age between 50-74 years as recent changes were made to age limit by US preventive health service, thus provide more accurate breast cancer screening rate among those who are recommended. Moreover, the PI and 1 or 2 research assistants were available during the data collection and questions or items were explained to the participants if any question was raised, thus missing data were minimized. Lastly, innovative statistical analytic approaches were used to answer research questions. The analytic approaches included Firth logistic regression to minimize the overestimation of odd ratios resulted multiple logistic regression due to small sample size in in certain cells and bootstrapping method using PROCESS to examine the mediating effect of trust between perceived discrimination in healthcare settings, cultural beliefs, acculturation, and breast cancer screening.

Despite the strengths of this study, several limitations should be noted. The convenience sampling and cross-sectional design limit generalizability of the study findings and causal relationships among study variables. In this study, four churches were conveniently selected for data collection. Since all participants were recruited from churches, samples overrepresented Christians. Also, all samples were recruited from Korean Churches and may have recruited women who stick to Korean cultures more than those who do not attend Korean Churches. For future studies, a random cluster sampling of Korean

churches and other Korean organizations may be needed to generalize the study findings. Furthermore, this study collected all data at the same point, thus causal inference cannot be made.

Our dependent variable was self-reported breast cancer screening in the past, thus relied on memory and may not provide exact information. Previous literature reported that people tend to over-report screening and actual screening rate may be worse (Ferrante et al., 2008; Rauscher, Johnson, Cho, & Walk, 2008). The goal of our study was not to establish breast cancer screening prevalence rates but to examine correlates of breast screening. However, future studies need to obtain objective screening data.

In previous literature, authors used different instruments to measure perceived discrimination, trust in healthcare providers, and trust in healthcare systems and several authors used one or two questions. Therefore, it was difficult to compare the level of these scores across different races/ethnicity. Future studies should try to use unified and validated measures to compare the levels across different groups.

Trust and perceived discrimination could have been affected by other important factors. Although we tried to include and control for factors that were known in previous literature, we could have missed some factors. For example, people with chronic diseases could have more chances to visit their doctors or healthcare providers and may had more chances for experiencing discrimination and lower or higher trusting relationship. There is no study to assess the factors associated with perceived discrimination in healthcare and trust in healthcare context among Korean Americans and this may be the area for further exploration in the future.

F. Implications

Major study findings suggest many areas for future research. Specific suggestions for future research are described in sections above. Therefore, section below summarizes the most important suggestions for future research and practice.

The existing literature supports that that racial/ethnic discrimination and low trust in healthcare providers/system are prevalent in minorities. However, more research including national studies and specific racial/ethnic groups are needed. The lack of national data or comparisons between different

racial/ethnic groups make it hard for researchers to compare overall trends among different minorities. These studies should try to use standardized reliable and validated instruments to examine discriminatory experience and experiences causing low trust at both interpersonal and system level. Doing so will help us understand how these phenomena works in healthcare settings and compare across different minorities while identifying target for interventions.

As mentioned earlier, this study is the first study to assess and examine perceived discrimination in healthcare, trust in healthcare providers/trust in healthcare system, and breast cancer screening in KA women and may not provide full explanation about their relationships. The retrospective findings of this study will give overview of breast cancer screening and the influence of perceived discrimination and trust, thus need further studies using complex sampling method and possibly longitudinal study to confirm the study findings, causality, and generalizability.

Among participants who did not have breast screening in past 2 years, they were asked to list why they did not have one done. Approximately 30% of women responded that they did not get screened because they did not have symptoms or because they felt healthy. This indicates that KA women may lack knowledge on why and when they need breast cancer screening done or it could be fear and denial (minimizing symptoms) that prevent women from getting breast cancer screening. Therefore, public education on breast cancer screening guidelines and importance of breast screening will be beneficial. There are several health fairs provided by hospitals located in Korean community. Health fairs can be excellent place to provide education to KA women about the current guidelines of breast cancer screening and why the screenings are needed. Collaborative work by researchers, Korean organizations, hospitals providing health fairs, and healthcare providers are needed to successfully implement such educational programs.

Trust was found to influence breast cancer screening directly and indirectly. Trust is a factor that can be strengthened with educational interventions. There are some intervention programs to increase trust in healthcare providers or groups of healthcare providers that include improving communication skills (e.g. encouraging patient-centered approach including share decision making and showing

empathy), emphasizing confidentiality, demonstrating doctor's technical competence (e.g. by advertising the healthcare provider's qualifications), improving continuity of care, and improving access to care as patients shown to trust doctors who are readily available (Rolfe, Cash-Gibson, Car, Sheikh, & McKinstry, 2014). However, not all interventions were effective in increasing trust and changing health behaviors. Establishing a trusting relationship is an iterative process that requires time and may need continuous effort to see the effectiveness of the interventions. This may require system level policy to continuously educate healthcare providers to increase trust. The interventions developed for Korean American women also need to be culturally sensitive and need to incorporate specific needs of this population. Qualitative study to explore and understand the root cause of why KA women express such a low trust level would be beneficial to develop the interventions.

Criticism by the media of the current US healthcare system, and confusion surrounding the Affordable Care Act may be contributing factors for low trust in the healthcare system among Korean American women. In this study, participants ranked high on 3 items in Distrust in healthcare system which are "The Health Care System covers up its mistakes" (mean=3.12, SD=1.01, range=1-5), "The Health Care System makes too many mistakes" (mean=3.04, SD=.85, range=1-5), "The Health Care System puts making money above patients' needs" (mean=3.09, SD=1.02, range 1-5). Providing transparency to patients, maintaining a high level of service quality such as reducing medical errors, and explaining thoroughly about the test/procedures may reduce distrust among KA women, and in turn, increase the breast cancer screening rate. There are Korean TV channels and Korean radio channels that air 24 hours a day in major cities in US including Chicago. Since the majority of participants answered that they mostly watch and listen to Korean TV and radio in the acculturation scale, Korean TV and radio stations could be an excellent source to provide information of current health system and providing answers to misconception of US healthcare systems that KA women may have.

Lastly, this study demonstrated that perceived low quality of care in terms of experience of discrimination and low trust in healthcare setting are associated with reduced likelihood of having breast cancer screening among KA women. This low perceived quality of care may have negative influence on

other cancer screening such as colorectal cancer screening and cervical cancer screening which KA also shown to have low screening rates, and may also have negative influence on medication adherence, health care utilization, and self-care in KA with chronic diseases as shown in previous research in other race/ethnicity. Our study will lay the groundwork for future research related to quality of care and promoting positive health behaviors among KA.

G. Conclusion

The purpose of this dissertation study was to examine the effects of perceived discrimination, trust in healthcare providers, and trust in healthcare system on breast cancer screening adherence in 196 Korean American women age between 50 to 74 years. Study findings replicated prior research on lower rates of breast cancer screening among KA women. The important contribution of this study was the identification of the role of perceived discrimination, trust in healthcare providers, and trust in healthcare system on breast cancer screening adherence in KA women. Results from this research have important implication for outreach, clinical practice, and research aimed at the elimination of breast cancer screening disparities in KA women.

APPENDICES

APPENDIX A

University of Illinois at Chicago IRB letter of Approval

UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Exemption Granted

June 15, 2016

Hye Hong, MSN
Biobehavioral Health Science
845 S. Damen Avenue
#716, M/C 802
Chicago, IL 60612-7350
Phone: (773) 827-6106 / Fax: (312) 996-8945

RE: **Research Protocol # 2016-0528**
 “Examining the Effects of Perceived Discrimination and Trust on Breast Cancer
 Screening Adherence among Korean American Women”

Dear Ms. Hong:

Your Claim of Exemption was reviewed on June 15, 2016 and it was determined that your research protocol meets the criteria for exemption as defined in the U. S. Department of Health and Human Services Regulations for the Protection of Human Subjects [(45 CFR 46.101(b))]. You may now begin your research.

The Board would like to express its appreciation for a well-presented proposal.

Approval Dates: June 15, 2016 – June 15, 2019

Your research may be conducted at UIC, Love of Jesus Mission Church, Lakeview Covenant Church, Korean Bethany Presbyterian Church, and Full Gospel Chicago Church.

The specific exemption category under 45 CFR 46.101(b) is:

APPENDIX A (continued)

University of Illinois at Chicago IRB letter of Approval

2 Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

You are reminded that investigators whose research involving human subjects is determined to be exempt from the federal regulations for the protection of human subjects still have responsibilities for the ethical conduct of the research under state law and UIC policy. Please be aware of the following UIC policies and responsibilities for investigators:

1. Amendments You are responsible for reporting any amendments to your research protocol that may affect the determination of the exemption and may result in your research no longer being eligible for the exemption that has been granted.
2. Record Keeping You are responsible for maintaining a copy all research related records in a secure location in the event future verification is necessary, at a minimum these documents include: the research protocol, the claim of exemption application, all questionnaires, survey instruments, interview questions and/or data collection instruments associated with this research protocol, recruiting or advertising materials, any consent forms or information sheets given to subjects, or any other pertinent documents.
3. Final Report When you have completed work on your research protocol, you should submit a final report to the Office for Protection of Research Subjects (OPRS).
4. Information for Human Subjects UIC Policy requires investigators to provide information about the research protocol to subjects and to obtain their permission prior to their participating in the research. The information about the research protocol should be presented to subjects in writing or orally from a written script. When appropriate, the following information must be provided to all research subjects participating in exempt studies:
 - a. The researchers affiliation; UIC, JBVMAC or other institutions,
 - b. The purpose of the research,
 - c. The extent of the subject's involvement and an explanation of the procedures to be followed,
 - d. Whether the information being collected will be used for any purposes other than the proposed research,
 - e. A description of the procedures to protect the privacy of subjects and the confidentiality of the research information and data,

APPENDIX A (continued)

University of Illinois at Chicago IRB letter of Approval

- f. Description of any reasonable foreseeable risks,
- g. Description of anticipated benefit,
- h. A statement that participation is voluntary and subjects can refuse to participate or can stop at any time,
- i. A statement that the researcher is available to answer any questions that the subject may have and which includes the name and phone number of the investigator(s).
- j. A statement that the UIC IRB/OPRS or JBVMAC Patient Advocate Office is available if there are questions about subject's rights, which includes the appropriate phone numbers.

Please be sure to:

→ Use your research protocol number (listed above) on any documents or correspondence with the IRB concerning your research protocol.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact me at (312) 996-2014 or the OPRS office at (312) 996-1711.

Sincerely,
Sandra Costello
Assistant Director, IRB # 7
Office for the Protection of Research Subjects

cc: Mariann R. Piano, Biobehavioral Health Science, M/C 802
Eileen Collins (faculty advisor), Biobehavioral Health Science, M/C 802

APPENDIX B**Permission letter to use a Revised Healthcare System Distrust Scale**

Permission to use a Revised HCSD scale

Judy Shea [sheaja@mail.med.upenn.edu]

Wednesday, February 10, 2016 5:25 AM

Julie,

This sounds very interesting. Of course you may use it. Good luck.

Judy

Hong, Hye Chong

To:

sheaja@mail.med.upenn.edu

Wednesday, February 10, 2016 1:07 AM

Hello, Dr. Shea.

My name is Julie Hong, a PhD student from University of Illinois at Chicago, College of Nursing.

I am planning to conduct a study (thesis) to examine the relationship between health care system distrust and breast cancer screening adherence among Korean American women.

I am very interested in your scale (a Revised HCSD) and would like to ask you for permission to use it.

The scale will be translated into Korean.

Thank you very much.

Best regards,
Julie Hong

APPENDIX C

Support letter

UNIVERSITY OF ILLINOIS
AT CHICAGO

College of Nursing
University Illinois at Chicago
845 S Damen Ave.
Chicago, IL 60612

May 2016

Korean Bethany Presbyterian Church
4707 W. Pratt Ave.
Lincolnwood, IL 60712

To pastor or key personnel,

My name is Hye Hong, a doctoral student from College of Nursing, University of Illinois at Chicago. I am performing research study entitled "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women." My academic advisor is Professor Dr. Eileen Collins. The purpose of this study is to examine the effects of perceived discrimination and trust on breast cancer adherence among Korean American women. The target populations are KA women who (1) are age between 50 to 74, (2) have no history of any type of cancer, (3) are able to read and understand either Korean or English, and (4) are able to provide informed consent. The finding of this study will serve as a foundation for future intervention studies that may target Korean American women and health care providers to increase breast cancer screening practices among Korean American women.

For this research study, I am proposing to collect data from 200 Korean American women from several Korean churches in Chicago and the metropolitan areas. Potential participants will be recruited before and after worship services on Sundays with your permission. Once potential participants show interest in my study and screened for eligibility, they will complete the questionnaires which may take about 15 to 20 minutes. The timeline for collecting data is from July to September, 2010. I am planning on visiting your church once or twice on Sunday during this timeline to distribute and collect the questionnaires.

Following the university regulations, I must have the letter of support to confirm that you allow me to collect data in your responsible area (church). I would like to request your kind permission. If you have read the research proposal and allow me to perform data collection, could you please give me a signature on a letter of support? Your letter of support will be attached as the additional documents for Institution Review Board (IRB) submission.

Thank you.

Sincerely,

Hye Chong Hong

APPENDIX C (continued)**Support letter**

Korean Bethany Presbyterian Church
4707 W. Pratt Ave.
Lincolnwood, IL 60712

May 2016


Chair person of Institution Review Board (IRB) committee
203 Administrative Office Building
1737 W. Polk Street
Chicago, IL 60612-7227

To chairperson of the IRB committee

This statement serves as a letter of support for Hye Chong Hong who is studying at University of Illinois at Chicago to perform data collection for her research at our church. After reviewing the proposal of "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women," I understand that the participation is voluntary and participants can withdraw from answering questionnaires at any time if they feel uncomfortable or for any other reason. Anonymous questionnaire assures that individual participant cannot be identified and the information will be kept confidential.

I, as a pastor/key personnel of our church, give Hye Chong Hong permission to collect her data in my church.

Sincerely,

Name Youn Bae Kim
Signature 

APPENDIX C (continued)

Support letter

UNIVERSITY OF ILLINOIS
AT CHICAGO

College of Nursing
University Illinois at Chicago
845 S Damen Ave.
Chicago, IL 60612

May 2016

Full Gospel Chicago Church
5224 N. Kedzie Ave.
Chicago, IL 60025

To pastor or key personnel,

My name is Hye Hong, a doctoral student from College of Nursing, University of Illinois at Chicago. I am performing research study entitled "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women." My academic advisor is Professor Dr. Eileen Collins. The purpose of this study is to examine the effects of perceived discrimination and trust on breast cancer adherence among Korean American women. The target populations are KA women who (1) are age between 50 to 74, (2) have no history of any type of cancer, (3) are able to read and understand either Korean or English, and (4) are able to provide informed consent. The finding of this study will serve as a foundation for future intervention studies that may target Korean American women and health care providers to increase breast cancer screening practices among Korean American women.

For this research study, I am proposing to collect data from 200 Korean American women from several Korean churches in Chicago and the metropolitan areas. Potential participants will be recruited before and after worship services on Sundays with your permission. Once potential participants show interest in my study and screened for eligibility, they will complete the questionnaires which may take about 15 to 20 minutes. The timeline for collecting data is from July to September, 2010. I am planning on visiting your church once or twice on Sunday during this timeline to distribute and collect the questionnaires.

Following the university regulations, I must have the letter of support to confirm that you allow me to collect data in your responsible area (church). I would like to request your kind permission. If you have read the research proposal and allow me to perform data collection, could you please give me a signature on a letter of support? Your letter of support will be attached as the additional documents for Institution Review Board (IRB) submission.

Thank you.

Sincerely,

Hye Chong Hong

APPENDIX C (continued)**Support letter**

Full Gospel Chicago Church
5224 N. Kedzie Ave.
Chicago, IL 60025

April 2016

Chair person of Institution Review Board (IRB) committee
203 Administrative Office Building
1737 W. Polk Street
Chicago, IL 60612-7227

To chairperson of the IRB committee

This statement serves as a letter of support for Hye Chong Hong who is studying at University of Illinois at Chicago to perform data collection for her research at our church. After reviewing the proposal of "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women," I understand that the participation is voluntary and participants can withdraw from answering questionnaires at any time if they feel uncomfortable or for any other reason. Anonymous questionnaire assures that individual participant cannot be identified and the information will be kept confidential.

I, as a pastor/key personnel of our church, give Hye Chong Hong permission to collect her data in my church.

Sincerely,

Name *Pan Ho Kim*

Signature *Pan Ho Kim*

APPENDIX C (continued)**Support letter**

UNIVERSITY OF ILLINOIS
AT CHICAGO

College of Nursing
University Illinois at Chicago
845 S Damen Ave.
Chicago, IL 60612

April 2016
Lakeview Covenant Church
950 Northbrook Ave.
Northbrook, IL 60062

To pastor or key personnel,

My name is Hye Chong Hong, a doctoral student from College of Nursing, University of Illinois at Chicago. I am performing research study entitled "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women." My academic advisor is Professor Dr. Eileen Collins. The purpose of this study is to examine the effects of perceived discrimination and trust on breast cancer adherence among Korean American women. The target population is KA women who (1) are age between 50 to 74, (2) have no history of any type of cancer, (3) are able to read and understand either Korean or English, and (4) are able to provide informed consent. The findings of this study will serve as a foundation for future intervention studies that may target Korean American women and health care providers to increase breast cancer screening practices among Korean American women.

For this research study, I am proposing to collect data from 200 Korean American women from several Korean churches in Chicago and the metropolitan areas. Potential participants will be recruited before and after worship services on Sundays with your permission. Once potential participants show interest in my study and screened for eligibility, they will complete the questionnaires which may take about 15 to 20 minutes. The timeline for collecting data is from July to September, 2016. I am planning on visiting your church once or twice on Sunday during this timeline to distribute and collect the questionnaires.

Following the university regulations, I must have the letter of support to confirm that you will allow me to collect data in your responsible area (church). I would like to request to your kind permission. After you have read the research proposal and agree to allow me to collect data at your church, could you please give me a signature on a letter of support? Your letter of support will be attached as the additional documents for Institution Review Board (IRB) submission.

Thank you.

Sincerely,

Hye Chong Hong

APPENDIX C (continued)**Support letter**

Lakeview Covenant Church
950 Northbrook Ave.
Northbrook, IL 60062

April 2016

Chair, Institutional Review Board (IRB) committee
203 Administrative Office Building
1737 W. Polk Street
Chicago, IL 60612-7227

To chairperson of the IRB committee,

This statement serves as a letter of support for Hye Chong Hong who is studying at University of Illinois at Chicago. I give Hye Chong Hong permission to complete data collection for her research at our church. After reviewing the proposal of "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women," I understand that the participation is voluntary and participants can withdraw from answering questionnaires at any time if they feel uncomfortable or for any other reason. Anonymous questionnaires assures that individual participant cannot be identified and the information will be kept confidential.

I, as a pastor/key personnel of our church, give Hye Chong Hong permission to collect her data in my church.

Sincerely,

Name *Jeshua Kang*
Signature *Jeshua Kang*

APPENDIX C (continued)**Support letter**

UNIVERSITY OF ILLINOIS
AT CHICAGO

College of Nursing
University Illinois at Chicago
845 S Damen Ave.
Chicago, IL 60612

May 2016

Love of Jesus Mission Church
400 Wagner Rd.
Northfield, IL 60093

To pastor or key personnel,

My name is Hye Hong, a doctoral student from College of Nursing, University of Illinois at Chicago. I am performing research study entitled "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women." My academic advisor is Professor Dr. Eileen Collins. The purpose of this study is to examine the effects of perceived discrimination and trust on breast cancer adherence among Korean American women. The target populations are KA women who (1) are age between 50 to 74, (2) have no history of any type of cancer, (3) are able to read and understand either Korean or English, and (4) are able to provide informed consent. The finding of this study will serve as a foundation for future intervention studies that may target Korean American women and health care providers to increase breast cancer screening practices among Korean American women.

For this research study, I am proposing to collect data from 200 Korean American women from several Korean churches in Chicago and the metropolitan areas. Potential participants will be recruited before and after worship services on Sundays with your permission. Once potential participants show interest in my study and screened for eligibility, they will complete the questionnaires which may take about 15 to 20 minutes. The timeline for collecting data is from July to September, 2010. I am planning on visiting your church once or twice on Sunday during this timeline to distribute and collect the questionnaires.

Following the university regulations, I must have the letter of support to confirm that you allow me to collect data in your responsible area (church). I would like to request your kind permission. If you have read the research proposal and allow me to perform data collection, could you please give me a signature on a letter of support? Your letter of support will be attached as the additional documents for Institution Review Board (IRB) submission.

Thank you.

Sincerely,

Hye Chong Hong

APPENDIX C (continued)**Support letter**

Love of Jesus Mission Church
400 Wagner Rd.
Northfield, IL 60093

May 2016

Chair person of Institution Review Board (IRB) committee
203 Administrative Office Building
1737 W. Polk Street
Chicago, IL 60612-7227

To chairperson of the IRB committee

This statement serves as a letter of support for Hye Chong Hong who is studying at University of Illinois at Chicago to perform data collection for her research at our church. After reviewing the proposal of "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women," I understand that the participation is voluntary and participants can withdraw from answering questionnaires at any time if they feel uncomfortable or for any other reason. Anonymous questionnaire assures that individual participant cannot be identified and the information will be kept confidential.

I, as a pastor/key personnel of our church, give Hye Chong Hong permission to collect her data in my church.

Sincerely,

Name Yong Suk Kim

Signature



APPENDIX D**Flyer (English version)**

**Volunteers are needed
for breast cancer screening study
for Korean American women**

We are looking for Korean American women

- **Between 50 and 74 years old**
- **No history of any type of cancer**
- **Able to read and understand either Korean or English**

- The purpose of this study is to examine the effects of perceived discrimination and trust on breast cancer adherence among Korean American women
- If you agree to participate in this study, the questionnaire will take about 15 to 20 minutes
- The surveys are completely confidential
- Participants will receive \$10.00 after completing the surveys.

Hye Chong Hong
773-827-6106, hhong28@uic.edu
Principal Investigator
University of Illinois at Chicago
College of Nursing

APPENDIX D (continued)**Flyer (Korean version)**

**미국에 사시는 한국분들의
유방암 검진 연구를 위하여
참가자를 모집합니다.**

다음과 같은 조건을 갖고 계신 분들의 협조를 부탁드립니다.

- 나이 50세 이상 74 미만**
- 암의 이력이 없으신분**
- 한국어나 영어로 읽을 수 있으시고 이해하실 수 있으신 분**

- 이 연구의 목적은 미국 헬스케어안에서 경험하는 차별과 헬스케어 (의사, 병원, 클리닉, 보험회사)에 관한 신뢰도가 한인 여성의 유방암 검진에 미치는 영향을 알아보기 위함입니다
- 이 연구에 참여하게 되면 15-20 분동안 설문지를 작성하게 됩니다
- 참여하신 설문지는 절대 비밀보장합니다
- 참여하신 분께는 10 불 캐쉬를 드립니다

Hye Chong Hong, 홍혜정
773-827-6106, hhong28@uic.edu
Principal Investigator
University of Illinois at Chicago
College of Nursing

APPENDIX E

Information letter (English version)

University of Illinois at Chicago Research Information for Participation in Social Behavioral Research

Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women

You are being asked to participate in a research study. Researchers are required to provide a information letter such as this one to tell you about the research, to explain that taking part is voluntary, to describe the risks and benefits of participation, and to help you to make an informed decision. You should feel free to ask the researchers any questions you may have.

| | |
|----------------------------------|--|
| Principal Investigator: | Hye Hong, MSN, RN, Doctoral Candidate |
| Department and Institution: | College of Nursing, University of Illinois at Chicago |
| Address and Contact Information: | 845 S. Damen Avenue. Chicago, IL 60612 773-827-6106, hhong28@uic.edu |

Why am I being asked?

You are being asked to be a subject in a research study about "Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women." The purpose of this research is to examine the effect of perceived discrimination and trust on breast cancer adherence among Korean American women. Joining the study is voluntary. You may refuse to join, or you may withdraw your decision to be in the study, for any reason, without penalty. The research is to generate new knowledge. You may not gain directly benefit from being in the study. However, the information gained from this research may help to develop educational programs on breast cancer screening for health care workers and Korean American women.

You have been asked to participate in the research because you are a Korean American woman, between 50 to 74 years old, you are able to read and understand either English or Korean, and you do not have any type of cancer.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future dealings with the University of Illinois at Chicago. **If you decide to participate, you are free to withdraw at any time without affecting that relationship.**

Approximately 200 subjects from 4 Korean churches in Chicago and the metropolitan areas may be involved in this research.

APPENDIX E (continued)

Information letter (English version)

What is the purpose of this research?

The purpose of the study is to learn about the effects of discrimination and trust in breast cancer screening adherence among Korean American women.

What procedures are involved?

This research will be performed at Korean churches in Chicago and the metropolitan areas. If you choose to participate in the study after reading the information letter, you will be given a packet of surveys to complete in a private room provided in your church. The survey will take about 15 to 20 minutes to complete. You are encouraged to contact the PI if you have any concerns or questions about the study.

What are the potential risks and discomforts?

To the best of my knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. Minimal risks are expected from your participation in the study, and no physical risks are associated with any of the procedure in the study. You may have some discomfort in answering some questions. You can decline to answer those questions and can withdrawal from the study at any time. There is a potential risk of loss of privacy and/or confidentiality. We will take the following precautions to protect your privacy and confidentiality.

What about privacy and confidentiality?

- We will not list your name on any study documents or materials. A unique code will be given to each document or questionnaire that does not link you to the documents.
- The completed surveys will be stored in locked file cabinets in the office at the UIC College of Nursing.
- All study information and data will be kept on a password protected computer in the possession of the PI.
- All data collected will be accessible only by PI and PI's faculty advisor, Dr. Eileen Collins.
- When the results of the research are published or discussed at conferences, no information will be included that would reveal your identity.
- This study will be monitored by the Office for the Protection of Research Subjects of UIC and State of Illinois auditors..

Are there benefits to taking part in the research?

This study is not designed to benefit you directly. This study is designed to learn more about breast cancer screening adherence among Korean American women. However, the knowledge gained from this research will help to develop educational programs on breast cancer screening for health care workers and Korean American.

APPENDIX E (continued)

Information letter (English version)

What are the costs for participating in this research?

There is no cost for you to participate in this research.

Will I be reimbursed for any of my expenses or paid for my participation in this research?

After you complete the questionnaire, you will receive \$10.00 in cash.

Can I withdraw or be removed from the study?

If you decide to participate, you are free to withdraw and discontinue participation at any time without penalty. The investigators have the right to stop your participation in this study without your consent at any time. This could be because you have had an unexpected reaction or have failed to follow the instructions.

Who should I contact if I have questions?

If you have any questions or concerns about the study, please contact the PI, Hye Chong Hong, at 773-827-6106 or hhong28@uic.edu. You may also contact the PI's academic advisor, Dr. Eileen Collins, by email at ecollins@uic.edu.

What are my rights as a research subject?

If you feel you have not been treated according to the descriptions in this form, or if you have any questions about your rights as a research subject, including questions, concerns, complaints, or to offer input, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.

Remember:

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

APPENDIX E (continued)

Information letter (Korean version)

University of Illinois at Chicago Research Information for Participation in Social Behavioral Research

Examining the effects of perceived discrimination and trust on breast cancer screening adherence among Korean American women

귀하는 본 연구에 참여 요청을 받았습니다. 본 연구 참여는 자율적으로 이루어집니다. 귀하는 자유롭게 연구 참여를 거절할 수 있고, 어떠한 이유에 의해서라도 연구 참여를 철회할 수 있습니다.

본 연구는 새로운 지식을 얻기 위함이며, 이러한 신지식은 앞으로 여성의 유방암 예방 검진 참여율을 높일 수 있을 것으로 기대됩니다. 귀하는 본 연구를 통해 직접적인 이익을 받지 않을 수 있습니다. 질문이 있을 경우 언제든지 연구자에게 문의하시기 바랍니다.

연구자: 홍혜정(Hye Hong), MSN, RN, Doctoral Candidate
학교명: College of Nursing, University of Illinois at Chicago
주소 및 연락처: 845 S. Damen Avenue.
Chicago, IL 60612
773-827-6106, hhong28@uic.edu

연구에 관한 일반적인 사항

귀하는 "차별 경험과 의사 및 병원 시스템에 관한 신뢰도가 유방암 예방 검진에 미치는 영향"에 관한 연구에 참여 요청을 받았습니다. 본 연구의 목적은 한인 여성의 의료 기관에서의 차별 경험과 신뢰도가 유방암 예방 검진에 미치는 영향을 조사하기 위함입니다. 귀하는 연구에 자발적으로 참여하는 것입니다. 귀하는 자유롭게 연구 참여를 거절할 수 있고, 어떠한 이유에 의해서라도 연구 참여를 철회할 수 있습니다. 귀하는 본 연구를 통해 직접적인 이익을 받지 않을 수 있습니다. 하지만 본 연구를 통한 얻게되는 결과는 유방암 검진을 증진시키기

APPENDIX E (continued)

Information letter (Korean version)

위한 의료진과 한인 여성을 대상으로 하는 교육 프로그램을 개발하는데 도움을 주게 될 것입니다.

귀하는 50세에서 74세의 한인 여성으로 영어 또는 한국어를 읽고 쓸수 있기 때문에 연구의 참여를 부탁드립니다.

귀하의 연구 참여는 자율적입니다. 본 연구의 참여 여부는 귀하와 관련된 병원/기관에 영향을 미치지 않을 것입니다. 본 연구에 참여하시더라도 언제든지 불이익없이 연구 참여를 철회하실 수 있습니다.

약 200명의 한인 여성이 본 연구에 참여할 것입니다.

연구 목적

본 연구의 목적은 한인 여성의 의료 기관에서의 차별 경험과 의사 및 병원 시스템에 관한 신뢰도가 유방암 예방 검진에 미치는 영향을 조사하기 위함입니다.

연구 절차

본 연구는 시카고 및 주변 도시에 있는 한인 교회에서 실행됩니다. 본 설명서를 읽으신 후 연구에 동참을 결정하실 경우 교회에 마련된 프라이빗한 방에서 설문지를 작성하게 됩니다. 설문지 작성 시간은 약 15분에서 20분입니다. 질문이 있을 경우 언제든지 연구자에게 문의하시기 바랍니다.

연구를 통해 발생할 수 있는 위험과 불편감

본 연구에 참여함으로써 인해 발생할 수 있는 어떠한 신체적인 위험이나 손상의 확률은 귀하께서 매일 일반적으로 겪게 되는 위험과 차이가 없을 것으로 예상되지만, 설문지를 작성하는 동안에 최소한의 불편감이 있을 수 있습니다. 가능한 불편감을 최소화하기 위해, 귀하는 불편감을 주는 질문에 대해서는 응답을 하지 않을 수 있으며, 설문지 작성을 철회할 수 있습니다.

APPENDIX E (continued)

Information letter (Korean version)

귀하의 정보가 노출 될 수 있는 잠재적인 위험은 있으나 아래와 같은 방법을 통하여 귀하의 사생활 보호를 할 것입니다.

귀하의 사생활 보호를 위한 연구자의 노력

- 귀하의 성함은 어떠한 연구 문서에도 기입되지 않을 것입니다.
- 연구 참여자의 신상 정보는 어디에도 공개되지 않을 것입니다.
- 연구에 관련된 모든 문서는 시카고 일리노이 주립대학교 간호대학 내에 있는 연구 책임자의 잠금 장치가 있는 서랍장에 보관될 것입니다.
- 연구자의 컴퓨터에 저장된 연구 정보를 보호하기 위해서 컴퓨터에 비밀번호를 설정할 것입니다.
- 모든 연구 자료는 연구자와 연구자의 지도교수에 (Dr. Collins) 의해서만 접근이 가능합니다.
- 본 연구의 결과가 출판되거나 컨퍼런스에서 발표될 경우 귀하의 신원에 관련된 어떠한 정보도 사용되지 않을 것 입니다
- 본 연구는 시카고 일리노이 주립대학교 연구윤리 위원회의 감독하에 있을 것입니다.

연구를 통해 발생할 수 있는 이점

귀하에게 직접적인 이익을 가져다 줄 수는 없지만, 본 연구를 통한 얻게되는 결과는 유방암 검진을 증진시키기 위한 의료진과 한인 여성을 대상한 교육 프로그램을 개발하는데 도움을 주게 될 것입니다.

연구 참여 비용

귀하는 연구 참여에 소요되는 시간을 제외한 어떤 비용도 부담하지 않을 것입니다.

연구에 참여함으로써 얻게 되는 사례품

설문지 작성을 완료하신 분은 연구 참여에 대한 감사의 표시로 \$10.00을 지급하겠습니다.

연구 참여를 중도에 멈추고자 할 경우

귀하는 어떠한 시점에도 불이익 없이 본 연구를 철회할 수 있습니다. 연구자 또한 어떠한 시점에도 귀하의 연구 참여를 중단시킬 수 있습니다. 이러한 조치는 귀하로부터 예상하지 못한 반응이

APPENDIX E (continued)

Information letter (Korean version)

있거나, 귀하가 연구의 절차를 따르지 않을 경우, 혹은 전체 연구가 중단되었을 경우에 가능합니다.

연구와 관련된 문의 사항

귀하는 연구자에게 연구와 관련된 문의 사항에 대해 질문하고 대답을 얻을 권리가 있습니다. 문의사항이 있을 시 본 연구자에게 전화 (773-827-6106)나 이메일(hhong28@uic.edu)로 연락하실 수 있습니다. 혹은 본 연구자의 지도교수인 Dr. Eileen Collins에게 이메일을 통해 (ecollins@uic.edu) 연락하실 수 있습니다.

연구 참여자의 권리에 관한 문의 사항

연구 참여자의 권익과 권리를 보호하기 위한 모든 조치들이 취해질 것입니다. 연구 참여자의 권익과 권리 보호에 관한 문의사항이 있을 경우, 미국 시카고 일리노이 주립대학교 연구윤리 심사위원회 (1-312-996-1711)로 전화를 하시거나 이메일(uicirb@uic.edu)로 알려주시면 감사하겠습니다.

- 진심으로 감사드립니다. -

APPENDIX F**Questionnaire (English version)**

Please mark one response indicating your answer except where instructed otherwise

1. In what year were you born? Year _____

2. How old were you when you immigrated to the United State? Age _____

3. Where were you born?

☐ Korea

☐ U.S.-----please go to question 5

☐ Other

4. If you were born in Korea or other countries, what is your immigrant status in U.S.?

☐ Immigrant-Naturalized

☐ Immigrant-Non-citizen

☐ Immigrant-Undocumented

☐ Decline to answer

5. What is your present marital status?

☐ Married

☐ Separated

☐ Divorced

☐ Widowed

☐ Never married

☐ A member of an unmarried couple

APPENDIX F (continued)**Questionnaire (English version)**

6. What is the highest level of education that you have completed?

- ☐ Elementary
- ☐ Middle school
- ☐ High school
- ☐ Some post high school, trade or technical school
- ☐ Trade or technical school graduate
- ☐ 1-3 years of college
- ☐ College graduate
- ☐ Some graduate work
- ☐ Have a graduate degree

7. What is your yearly family income--that is the combined income of all family members you live with?

- ☐ Less than \$10,000 (=Less than \$833/month or \$192/week)
- ☐ \$10,000-24,999 (=\$834-2083/month or \$193-481/week)
- ☐ \$25,000-39,999 (=\$2084-3333/month or \$482-769/week)
- ☐ \$40,000-54,999 (=\$3334-4583/month or \$777-1058/week)
- ☐ \$55,000 or more (=\$4584/month or \$1059/week or more)
- ☐ Don't know
- ☐ Decline to answer

APPENDIX F (continued)
Questionnaire (English version)

8. What is your present employment status?

- ☐ Part-time
- ☐ Full-time
- ☐ Not working

9. Do you have a regular doctor or a regular place you go for health care?

- ☐ Yes
- ☐ No

10. What is race of your doctor/doctors?

- ☐ Korean
- ☐ Non-Korean

11. Are you able to find a Korean doctor to care for you if you want one?

- ☐ Yes
- ☐ No

12. Does your insurance allow you to go to the doctor you prefer?

- ☐ Yes
- ☐ No

APPENDIX F (continued)
Questionnaire (English version)

13. What type of health insurance plan do you now have?

- ☐ Private insurance (such as Blue Cross, Aetna, HMO, Cigna)
- ☐ Affordable Care Act Insurance (Obama care)
- ☐ Medicare
- ☐ Medicaid
- ☐ Medicare/Medicaid
- ☐ Uninsured-----Please go to question 16
- ☐ Any other insurance (*Please write-in below*)

14. Do you have co-payment with your insurance to have a mammogram?

- ☐ Yes.....Please go to question 15
- ☐ No.....Please go to question 16
- ☐ Don't know-----Please go to question 16

15. Does co-payment stop you from having a mammogram done?

- ☐ Yes
- ☐ No

16. Are you able to receive healthcare where you want?

- ☐ Yes
- ☐ No

APPENDIX F (continued)**Questionnaire (English version)**

17. Do you know **WHERE** to go for a mammogram that would accept your insurance?

☐ Yes

☐ No

18. How do you rate your current health?

☐ Excellent

☐ Very good

☐ Good

☐ Fair

☐ Poor

19. Do you have a family history of breast cancer?

☐ Yes

☐ No

APPENDIX F (continued)
Questionnaire (English version)

The following questions are regarding your history of mammography.

20. Have you ever received a mammogram?

☐ Yes

☐ No -----Please go to question 22

21. Have you received a mammogram in the last 2 years?

☐ Yes

☐ No

22. If you have not had a mammogram in the last 2 years, please answer the following question.

What are the major reasons that you have not gotten a mammogram in the past 2 years?

APPENDIX F (continued)

Questionnaire (English version)

SAS-K

(Choi and Reed, 2011)

For each question, please circle the number to each question that best answers the question for you. Please answer every question!

| | Only Korean | Korean better than English | Both equally | English better than Korean | Only English |
|--|-------------|----------------------------|--------------|----------------------------|--------------|
| 1. In general, what language(s) do you read and speak? | 1 | 2 | 3 | 4 | 5 |
| 2. What was the language(s) you used as a child? | 1 | 2 | 3 | 4 | 5 |
| 3. What language(s) do you usually speak at home? | 1 | 2 | 3 | 4 | 5 |
| 4. In which language(s) do you usually think? | 1 | 2 | 3 | 4 | 5 |
| 5. What language(s) do you usually speak with your friends? | 1 | 2 | 3 | 4 | 5 |
| 6. In what language(s) are the TV programs you usually watch? | 1 | 2 | 3 | 4 | 5 |
| 7. In what language(s) are the radio programs you usually listen to? | 1 | 2 | 3 | 4 | 5 |
| 8. In general, in what language(s) are the movies, TV, and radio programs you prefer to watch and listen to? | 1 | 2 | 3 | 4 | 5 |

| | All Koreans | More Koreans than Americans | About half and half | More Americans than Koreans | All Americans |
|--|-------------|-----------------------------|---------------------|-----------------------------|---------------|
| 9. Your close friends are | 1 | 2 | 3 | 4 | 5 |
| 10. You prefer going to social gatherings/parties at which the people are | 1 | 2 | 3 | 4 | 5 |
| 11. The persons you visit or who visit you are | 1 | 2 | 3 | 4 | 5 |
| 12. If you could choose your children's friends, you would want them to be | 1 | 2 | 3 | 4 | 5 |

APPENDIX F (continued)

Questionnaire (English version)

BREAST CANCER BELIEFS

Carol Estwing Ferrans, et al., 2005
UIC Center for Population Health and Health Disparities
University of Illinois at Chicago

People have different opinions about breast cancer symptoms and its treatment. We are interested in your opinions about the following statements. Please indicate if you think these statements are TRUE or FALSE.

1. If a breast lump is not painful, it is not cancer.
True 1
False 2
2. If a breast lump does not get bigger, it is not cancer.
True 1
False 2
3. If a breast lump is touched/pressed often, the lump will turn out to be breast cancer.
True 1
False 2
4. Women with large breasts are more likely to get breast cancer than women with small breasts.
True 1
False 2
5. The more you worry about breast cancer, the more likely you will get it.
True 1
False 2
6. If you take good care of yourself, you won't get breast cancer.
True 1
False 2
7. Faith in God can protect you from breast cancer.
True 1
False 2

APPENDIX F (continued)

Questionnaire (English version)

8. You only need to get a mammogram if you find a problem in your breast.
 True 1
 False 2
9. Mammograms can cause breast cancer.
 True 1
 False 2
10. If you pray enough, sometimes breast lumps will disappear.
 True 1
 False 2
11. If breast cancer is cut open in surgery, it will grow faster.
 True 1
 False 2
12. If you don't have breast cancer in your family, you don't need to get mammograms.
 True 1
 False 2
13. If you have a breast lump, a "natural" remedy can help to get rid of it.
 True 1
 False 2
14. If a woman has enough faith in God, she won't need treatment for breast cancer.
 True 1
 False 2
15. If a woman is poor, she won't get cured from cancer, because she won't get the best treatment.
 True 1
 False 2
16. If breast cancer is treated correctly, it can be cured.
 True 1
 False 2
17. It doesn't really matter if you get treated for breast cancer, because if you get cancer, it will kill you sooner or later.
 True 1
 False 2

APPENDIX F (continued)

Questionnaire (English version)

Perceived discrimination in health care

(Bird & Bogart, 2001)

Thinking about your experience getting health care, how often does each of the following happen to you because of your race (because you are Korean)?

| | Never | Rarely | Sometimes | Most of the time | Always |
|--|-------|--------|-----------|------------------|--------|
| 1. You are not treated with courtesy | 1 | 2 | 3 | 4 | 5 |
| 2. You are not treated with respect | 1 | 2 | 3 | 4 | 5 |
| 3. You receive poorer service than other people | 1 | 2 | 3 | 4 | 5 |
| 4. A doctor, nurse, or medical provider acts as if he or she thinks you are not smart | 1 | 2 | 3 | 4 | 5 |
| 5. A doctor, nurse, or medical provider acts as if he or she is afraid of you | 1 | 2 | 3 | 4 | 5 |
| 6. A doctor, nurse, or medical provider acts as if he or she is better than you | 1 | 2 | 3 | 4 | 5 |
| 7. You feel like a doctor, nurse, or medical provider is not listening to what you are saying. | 1 | 2 | 3 | 4 | 5 |

APPENDIX F (continued)
Questionnaire (English version)

TRUST IN PHYSICIAN

(Developed by Anderson and Derrick in 1990)

For each statement, please circle the number to each question below whether you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree.

| | Strongly Disagree | Disagree | Undecided | Agree | Strongly Agree |
|--|----------------------|----------|-----------|-------|-------------------|
| 1. I doubt that doctors really care about me as a person. | 1 | 2 | 3 | 4 | 5 |
| 2. Doctors are usually considerate of my needs and put them first. | 1 | 2 | 3 | 4 | 5 |
| 3. I trust doctors so much I always try to follow their advice. | 1 | 2 | 3 | 4 | 5 |
| 4. If doctors tell me something is so, then it must be true. | 1 | 2 | 3 | 4 | 5 |
| 5. I sometimes distrust the first doctor's opinion and would like a second one. | 1 | 2 | 3 | 4 | 5 |
| 6. I trust doctors' judgments about my medical care. | 1 | 2 | 3 | 4 | 5 |
| 7. I feel doctors do not do everything they should for my medical care. | 1 | 2 | 3 | 4 | 5 |
| 8. I trust doctors to put my medical needs above all other considerations when treating my medical problems. | 1 | 2 | 3 | 4 | 5 |
| 9. Doctors are real experts in taking care of medical problems like mine. | 1 | 2 | 3 | 4 | 5 |
| 10. I trust doctors to tell me if a mistake was made about my treatment. | 1 | 2 | 3 | 4 | 5 |
| 11. I sometimes worry that doctors may not keep the information we discuss totally private. | 1 | 2 | 3 | 4 | 5 |

APPENDIX F (continued)

Questionnaire (English version)

A Revised Health Care System Distrust (HCSD)

(Shea et al., 2008)

For each statement, please circle the number to each question below whether you strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree

| | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|--|----------------------|----------|-------------------------------------|-------|-------------------|
| 1. The Health Care System does its best to make patients' health better | 1 | 2 | 3 | 4 | 5 |
| 2. The Health Care System covers up its mistakes | 1 | 2 | 3 | 4 | 5 |
| 3. Patients receive high quality medical care from the Health Care System | 1 | 2 | 3 | 4 | 5 |
| 4. The Health Care System makes too many mistakes | 1 | 2 | 3 | 4 | 5 |
| 5. The Health Care System puts making money above patients' needs | 1 | 2 | 3 | 4 | 5 |
| 6. The Health Care System gives excellent medical care | 1 | 2 | 3 | 4 | 5 |
| 7. Patients get the same medical treatment from the Health Care System, no matter what the patient's race or ethnicity | 1 | 2 | 3 | 4 | 5 |
| 8. The Health Care System lies to make money | 1 | 2 | 3 | 4 | 5 |
| 9. The Health Care System experiments on patients without them knowing | 1 | 2 | 3 | 4 | 5 |

APPENDIX F (continued)

Questionnaire (Korean version)

다음은 귀하에 관한 질문들입니다.

가장 적절한 항목에 표시를 하거나, 해당되는 숫자로 아래의 질문들에 답해 주십시오

1. 귀하는 몇 년도에 태어나셨습니까? _____ 년도
2. 몇 년도에 미국에 오셨습니까? _____ 년도
3. 어디서 태어나셨습니까?
 - ☐ 한국
 - ☐ 미국-----> 5번으로 가세요
 - ☐ 다른 나라
4. 한국이나 다른 나라에서 태어나신 분은 미국에서 신분이 어떻게 되십니까?
 - ☐ 이민자--시민권자
 - ☐ 이민자--합법적인 비시민권자 (예: 영주권)
 - ☐ 이민자--불체자
 - ☐ 대답하기 거부
5. 귀하의 결혼 상태는 무엇입니까?
 - ☐ 결혼
 - ☐ 별거
 - ☐ 이혼
 - ☐ 사별
 - ☐ 결혼한 적이 없다
 - ☐ 결혼하지 않은 커플 관계
6. 귀하의 최종 학력이 어떻게 되십니까?
 - ☐ 초등학교 졸업
 - ☐ 중학교 졸업
 - ☐ 고등학교 졸업
 - ☐ 전문대학 중퇴
 - ☐ 전문대학 졸업
 - ☐ 대학 중퇴
 - ☐ 대학 졸업
 - ☐ 대학원 중퇴
 - ☐ 대학원 졸업

APPENDIX F (continued)

Questionnaire (Korean version)

7. 지난 1년 동안 귀하 가정의 총 수입은 얼마였습니까?
- ☐ \$10,000 미만 (= \$833/달 혹은 \$192/주)
 - ☐ \$10,000에서24,999 사이(= \$834-2083/달 혹은 \$193-481/주)
 - ☐ \$25,000에서39,999 사이 (= \$2084-3333/달 혹은 \$482-769/주)
 - ☐ \$40,000 에서54,999 사이 (= \$3334-4583/달 혹은 \$777-1058/주)
 - ☐ \$55,000 이상 (= \$4584/달 혹은 \$1059/주 이상)
 - ☐ 모르겠다
 - ☐ 대답하기 거부
8. 현재 고용 상태는 어떻게 되십니까?
- ☐ 파트타임 고용 (Employed part-time)
 - ☐ 전일제 고용 (Employed full-time)
 - ☐ 고용된 상태가 아님 (Not employed)
9. 귀하는 건강을 위해 정기적으로 방문하시는 의사(주치의) 나 진료소가 있습니까?
- ☐ 예
 - ☐ 아니오
10. 현재 정기적으로 방문하시는 의사 (주치의) 의 인종은 무엇입니까?
- ☐ 한국인
 - ☐ 비한국인 (한국인이 아닌 다른 민족/인종)
11. 만약 원하신다면 한국 의사를 찾으실 수 있습니까?
- ☐ 예
 - ☐ 아니오
12. 가지고 있는 보험으로 원하는 의사에게 진료를 받을 수 있는 것이 가능합니까?
- ☐ 예
 - ☐ 아니오

APPENDIX F (continued)

Questionnaire (Korean version)

13. 어떤 종류의 건강 보험을 가지고 계십니까?

- ☐ 사보험 (블루 크로스, 에트나, 시그나, HMO 등)
- ☐ 오바마 케어 (Affordable Care Act Insurance--Obama care)
- ☐ 메디케어
- ☐ 메이케이드
- ☐ 메디케어/메이케이드
- ☐ 보험 없음-----> 16번으로 가세요
- ☐ 다른 종류의 보험 (구체적으로 적어주세요) _____

14. 유방정밀검사 촬영 (마모그램; mammogram) 검사를 할때 귀하의 보험에는 환자 부담금이 (co-payment) 있습니까?

- ☐ 예-----> 15번으로 가세요
- ☐ 아니오-----> 16번으로 가세요
- ☐ 잘 모르겠다-----> 16번으로 가세요

15. 환자 부담금 (co-payment) 때문에 마모그램을 안 하게 되십니까?

- ☐ 예
- ☐ 아니오

16. 원하는 곳에서 의료서비스/진료를 받으실 수 있습니까?

- ☐ 예
- ☐ 아니오

17. 귀하께서 가지고 계신 보험을 받는 마모그램을 하는 장소/진료소를 알고 계십니까?

- ☐ 예
- ☐ 아니오

18. 전반적으로 귀하의 현재 건강 상태는 어떠합니까?

- ☐ 최고로 좋다
- ☐ 아주 좋다
- ☐ 좋다
- ☐ 조금 나쁘다
- ☐ 나쁘다

APPENDIX F (continued)

Questionnaire (Korean version)

19. 가족중에 유방암에 걸리신 분이 계십니까?

☐ 예

☐ 아니오

다음은 유방정밀검사 촬영 (마모그램; mammogram)을 받으셨는가에 대한 질문들입니다.

20. 마모그램을 한번이라도 받으신 적이 있습니까?

☐ 예

☐ 아니오----->22번으로 가세요

21. 최근 2년간 마모그램을 받으신 적이 있습니까?

☐ 예

☐ 아니오

22. 최근 2년간 마모그램을 받으신 적이 없으시다면 다음 질문에 답하여 주십시오.

최근 2년간 메모그램을받으신 적이 없으시다면 주요한 이유가 무엇입니까?

자세히 적어 주세요

다음 페이지로 가주세요

APPENDIX F (continued)

Questionnaire (Korean version)

문화 적응

다음은 귀하의 미국 생활에 관한 질문입니다. 각 질문에 해당되는 곳에 표시(✓)하여 주십시오.

| | 오직 한국어만 사용 | 한국어를 영어보다 더 잘한다 | 한국어, 영어 둘다 골고루 | 영어를 한국어보다 더 잘한다 | 오직 영어만 사용 |
|---|------------------|-----------------------|----------------------|-----------------------|-----------------|
| 1. 귀하께서 주로 읽고, 말하는 언어는? | 1 | 2 | 3 | 4 | 5 |
| 2. 어렸을 때 귀하께서 사용하신 언어는? | 1 | 2 | 3 | 4 | 5 |
| 3. 집에서 보통 쓰시는 (말하는) 언어는? | 1 | 2 | 3 | 4 | 5 |
| 4. 주로 머리 속으로 생각하는 언어는? | 1 | 2 | 3 | 4 | 5 |
| 5. 친구들과 주로 말하는 언어는? | 1 | 2 | 3 | 4 | 5 |
| 6. 주로 시청하시는 텔레비전 프로그램의 언어는? | 1 | 2 | 3 | 4 | 5 |
| 7. 주로 청취하시는 라디오 프로그램의 언어는? | 1 | 2 | 3 | 4 | 5 |
| 8. 영화, 텔레비전, 혹은 라디오 프로그램을 시청하거나 들으실 때, 선호하시는 언어는? | 1 | 2 | 3 | 4 | 5 |

| | 전부 한국인들 | 한국인이 미국인보다 더 많다 | 한국인, 미국인 반반 | 미국인이 한국인보다 더 많다 | 전부 미국인들 |
|---|------------|-----------------------|----------------|-----------------------|------------|
| 9. 귀하의 친한 친구들은? | 1 | 2 | 3 | 4 | 5 |
| 10. 사교모임이나 파티를 갈 때 선호하는 사람들은? | 1 | 2 | 3 | 4 | 5 |
| 11. 귀하께서 방문하시거나, 혹은 귀하의 집으로 방문하는 사람들은? | 1 | 2 | 3 | 4 | 5 |
| 12. 만약 귀하의 자녀의 친구들을 선택할 수 있다고 할 때, 원하시는 사람들은? | 1 | 2 | 3 | 4 | 5 |

APPENDIX F (continued)
Questionnaire (Korean version)

유방암에 관한 건강 신념

사람들은 유방암의 증상이나 치료 방법에 대해 다양한 의견을 가지고 있습니다.

유방암에 관한 각 문항들을 읽고 해당하는 곳에 표시(✓)해 주십시오.

1. 유방에 만져지는 덩어리가 아프지 않으면 암이 아니다.
 맞다 1
 틀리다 2
2. 유방에 만져지는 덩어리가 더 이상 커지지 않으면, 암이 아니다.
 맞다 1
 틀리다 2
3. 유방에 만져지는 덩어리를 자주 만지거나 누르면, 유방암으로 변한다.
 맞다 1
 틀리다 2
4. 유방이 큰 여성이 유방이 작은 여성보다 유방암에 걸릴 가능성이 더 크다.
 맞다 1
 틀리다 2
5. 유방암에 대해 걱정을 많이 할수록, 유방암에 걸릴 가능성이 더 크다.
 맞다 1
 틀리다 2
6. 내 스스로 건강관리를 잘 한다면, 유방암에 걸릴일이 없다.
 맞다 1
 틀리다 2
7. 하나님을 믿는다면, 유방암에 안 걸릴 것이다.
 맞다 1
 틀리다 2
8. 유방에서 문제가 발견됐을 때에만 유방정밀검사 촬영 (마모그램; mammogram)이 필요하다.
 맞다 1
 틀리다 2

APPENDIX F (continued)

Questionnaire (Korean version)

9. 유방정밀검사 촬영 (마모그램; mammogram)은 유방암을 유발한다.
 맞다 1
 틀리다 2
10. 내가 하나님께 기도를 열심히 한다면, 유방에 만져지는 덩어리가 사라질 것이다.
 맞다 1
 틀리다 2
11. 만약 유방암 절제술을 한다면, 암은 빠르게 커질것이다.
 맞다 1
 틀리다 2
12. 가족 중에 유방암 진단을 받은 사람이 없다면, 유방정밀검사 촬영 (마모그램; mammogram)을 할 필요가 없다
 맞다 1
 틀리다 2
13. 만약 유방에 덩어리가 만져진다면, 자연적 치료법 (민간요법)이 그 덩어리를 없애는데 도움이 된다.
 맞다 1
 틀리다 2
14. 유방암에 걸린 여성이 독실한 사람이라면, 유방암 치료를 받을 필요가 없다
 맞다 1
 틀리다 2
15. 유방암에 걸린 여성이 가난하다면, 최상의 치료를 받을 수 없기 때문에 유방암을 치료할 수 없을 것이다.
 맞다 1
 틀리다 2
16. 유방암을 제대로 치료한다면, 유방암은 완치될 수 있다.
 맞다 1
 틀리다 2
17. 암에 걸리면 언젠가 죽을것이기 때문에, 유방암이 완치 되었다하더라도 별 의미가 없다.
 맞다 1
 틀리다 2

APPENDIX F (continued)

Questionnaire (Korean version)

의료 기관에서의 차별경험

귀하가 한국인이기 때문에 아래 각 내용에 대한 차별을 얼마나 자주 경험하였는지 해당하는 곳에 표시(✓)하여 주시기 바랍니다.

| | 절대 없음 | 드물게 있음 | 가끔 있음 | 대부분 있음 | 항상 있음 |
|---|-------|--------|-------|--------|-------|
| 1. 나는 정중하게 대우받지 못했다. | 1 | 2 | 3 | 4 | 5 |
| 2. 나는 존중받지 못했다. | 1 | 2 | 3 | 4 | 5 |
| 3. 나는 다른 인종에 비해 의료서비스를 제대로 받지 못했다. | 1 | 2 | 3 | 4 | 5 |
| 4. 의사, 간호사, 또는 의료 종사자들은 나를 똑똑하지 않은 사람으로 취급했다. | 1 | 2 | 3 | 4 | 5 |
| 5. 의사, 간호사, 또는 의료 종사자들은 나를 싫어하는 것처럼 행동했다. | 1 | 2 | 3 | 4 | 5 |
| 6. 의사, 간호사, 또는 의료 종사자들은 나보다 우월한 것처럼 행동했다. | 1 | 2 | 3 | 4 | 5 |
| 7. 의사, 간호사, 또는 의료 종사자들은 내가 하는 말을 경청하고 있지 않다고 느낀다. | 1 | 2 | 3 | 4 | 5 |

APPENDIX F (continued)

Questionnaire (Korean version)

의사에 대한 신뢰도

다음 질문들은 의사와의 경험에 관한 것입니다.

각 문항들을 주의 깊게 읽고 해당하는 곳에 표시(✓)해 주십시오.

| | 전혀 동의 안함 | 동의 안함 | 동의도 부정도 않음 | 동의함 | 매우 동의 함 |
|--|-------------|-------|------------------|-----|------------|
| 1. 나는 의사가 나를 하나의 인격체로서 진심으로 걱정하는지 의심스럽다. | 1 | 2 | 3 | 4 | 5 |
| 2. 의사들은 대체적으로 내가 원하는 것에 우선순위를 두고 배려한다. | 1 | 2 | 3 | 4 | 5 |
| 3. 나는 의사들을 많이 믿기 때문에 그들의 의견을 따르려고 한다. | 1 | 2 | 3 | 4 | 5 |
| 4. 의사들이 나에게 무언가 맞다고 말한다면 그것은 진실임이 틀림없다. | 1 | 2 | 3 | 4 | 5 |
| 5. 나는 의사의 소견을 믿지 못하는 때가 있기 때문에, 다른 의사의 소견을 들길 원한다. | 1 | 2 | 3 | 4 | 5 |
| 6. 내 건강 관리에 대해서 나는 의사의 판단을 믿는다. | 1 | 2 | 3 | 4 | 5 |
| 7. 나는 의사들이 완벽히 내 건강 관리를 하지 않고 있다고 느낀다. | 1 | 2 | 3 | 4 | 5 |
| 8. 나는 의사들이 나를 치료할때, 모든 치료 방법을 강구한다고 믿는다. | 1 | 2 | 3 | 4 | 5 |
| 9. 의사들은 의료 문제를 잘 해결하는 진정한 전문가이다. | 1 | 2 | 3 | 4 | 5 |
| 10. 의사들이 혹시 치료할때 실수를 했더라도, 나에게 말해 줄 것이라 믿는다. | 1 | 2 | 3 | 4 | 5 |
| 11. 나는 의사들이 나의 개인정보를 누설할지 걱정하는 때가 있다. | 1 | 2 | 3 | 4 | 5 |

APPENDIX F (continued)

Questionnaire (Korean version)

의료 시스템에 관한 불신

다음 질문들은 의료 시스템과 관련된 경험에 관한 것입니다.

의료 시스템은 건강관리와 관련된 모든 기관들, 즉 **병원, 클리닉, 보험회사** 등을 포함합니다.

각 문항들을 주의 깊게 읽고 해당하는 곳에 표시(✓)해 주십시오.

| | 전혀 동의 안함 | 동의 안함 | 동의도 부정도 않음 | 동의함 | 매우 동의 함 |
|---|-------------|-------|------------------|-----|------------|
| 1. 의료 시스템은 보다 나은 환자의 건강 관리를 위해 최선을 다한다. | 1 | 2 | 3 | 4 | 5 |
| 2. 의료 시스템은 그들의 실수를 은폐한다/감춘다. | 1 | 2 | 3 | 4 | 5 |
| 3. 의료 시스템은 환자들에게 최고의 의료서비스를 제공한다. | 1 | 2 | 3 | 4 | 5 |
| 4. 의료 시스템은 너무 많은 실수를 한다. | 1 | 2 | 3 | 4 | 5 |
| 5. 의료 시스템은 환자가 필요로 하는 것 보다 돈 버는 것을 더 중요시 여긴다. | 1 | 2 | 3 | 4 | 5 |
| 6. 의료 시스템은 훌륭한 의료서비스를 제공한다. | 1 | 2 | 3 | 4 | 5 |
| 7. 환자의 인종/민족에 관계없이 의료시스템은 동일한 의료 서비스를 제공한다. | 1 | 2 | 3 | 4 | 5 |
| 8. 의료시스템은 돈을 벌기 위해 거짓말을 한다. | 1 | 2 | 3 | 4 | 5 |
| 9. 의료 시스템은 환자들에게 알리지 않고 의료 실험을 한다. | 1 | 2 | 3 | 4 | 5 |

- 설문에 참여해 주셔서 대단히 감사합니다. -

CITED LITERATURE

- Alba, Israel De, Hubbell, F. Allan, McMullin, Juliet M., Sweningson, Jamie M., & Saitz, Richard. (2005). Impact of U.S. Citizenship status on cancer screening among immigrant women. *Journal of General Internal Medicine*, 20(3), 290-296. doi: 10.1111/j.1525-1497.2005.40158.x
- American Cancer Society [ACS] (2016). *Special Section: Cancer in Asian Americans, Native Hawaiians, and Pacific Islanders*. Cancer Facts & Figures 2016. Atlanta: American Cancer Society. Retrieved from <http://www.cancer.org/acs/groups/content/@research/documents/document/acspc-047080.pdf> on April, 2016
- American Cancer Society [ACS] (2016). *Cancer Facts and Figures 2016*. Atlanta, Ga: American Cancer Society. Retrieved from <http://www.cancer.org/acs/groups/content/@research/documents/document/acspc-047079.pdf> on April, 2016
- Anderson, G., Jun, M., & Choi, K. (2007). Breast cancer screening for Korean women must consider traditional risks as well as two genetic risk factors: genetic polymorphisms and inheritable gene mutations. *Cancer Nurs*, 30(3), 213-222. doi: 10.1097/01.NCC.0000270705.41919.dc
- Anderson, Kathryn Freeman. (2013). Diagnosing Discrimination: Stress from Perceived Racism and the Mental and Physical Health Effects*. *Sociological Inquiry*, 83(1), 55-81. doi: 10.1111/j.1475-682X.2012.00433.x
- Anderson, L. A., & Dedrick, R. F. (1990). Development of the Trust in Physician scale: a measure to assess interpersonal trust in patient-physician relationships. *Psychol Rep*, 67(3 Pt 2), 1091-1100. doi: 10.2466/pr0.1990.67.3f.1091
- Aneshensel, C.S. (1992). Social stress: Theory and research. *Annual Review of Sociology*, 18, 15-38
- Armstrong, K., McMurphy, S., Dean, L. T., Micco, E., Putt, M., Halbert, C. H., . . . Shea, J. A. (2008). Differences in the patterns of health care system distrust between blacks and whites. *J Gen Intern Med*, 23(6), 827-833. doi: 10.1007/s11606-008-0561-9
- Armstrong, K., Putt, M., Halbert, C. H., Grande, D., Schwartz, J. S., Liao, K., . . . Shea, J. A. (2013). Prior

- experiences of racial discrimination and racial differences in health care system distrust. *Med Care*, 51(2), 144-150. doi: 10.1097/MLR.0b013e31827310a1
- Armstrong, K., Ravenell, K. L., McMurphy, S., & Putt, M. (2007). Racial/ethnic differences in physician distrust in the United States. *Am J Public Health*, 97(7), 1283-1289. doi: 10.2105/ajph.2005.080762
- Armstrong, K., Rose, A., Peters, N., Long, J. A., McMurphy, S., & Shea, J. A. (2006). Distrust of the health care system and self-reported health in the United States. *J Gen Intern Med*, 21(4), 292-297. doi: 10.1111/j.1525-1497.2006.00396.x
- Asian Pacific Islander American Health Forum [APIAHF]. (2011). *Demographic and socioeconomic profiles of Asian Americans, Native Hawaiians, and Pacific Islanders in the United States*. http://www.apiahf.org/sites/default/files/Demographic_Socioeconomic_Profiles_AANHPI.pdf.
- Beatty, Paul. (2004). *The Dynamics of Cognitive Interviewing Methods for Testing and Evaluating Survey Questionnaires* (pp. 45-66): John Wiley & Sons, Inc.
- Beatty, Paul C., & Willis, Gordon B. (2007). Research Synthesis: The Practice of Cognitive Interviewing. *Public Opinion Quarterly*, 71(2), 287-311. doi: 10.1093/poq/nfm006
- Benjamins, M. R. (2006). Religious influences on trust in physicians and the health care system. *Int J Psychiatry Med*, 36(1), 69-83.
- Benjamins, M. R. (2012). Race/ethnic discrimination and preventive service utilization in a sample of whites, blacks, Mexicans, and Puerto Ricans. *Med Care*, 50(10), 870-876. doi: 10.1097/MLR.0b013e31825a8c63
- Benkert, R., Hollie, B., Nordstrom, C. K., Wickson, B., & Bins-Emerick, L. (2009). Trust, mistrust, racial identity and patient satisfaction in urban African American primary care patients of nurse practitioners. *J Nurs Scholarsh*, 41(2), 211-219. doi: 10.1111/j.1547-5069.2009.01273.x
- Benkert, R., Peters, R. M., Clark, R., & Keves-Foster, K. (2006). Effects of perceived racism, cultural mistrust and trust in providers on satisfaction with care. *J Natl Med Assoc*, 98(9), 1532-1540.
- Bernstein, K. S., Park, S. Y., Shin, J., Cho, S., & Park, Y. (2011). Acculturation, discrimination and

- depressive symptoms among Korean immigrants in New York City. *Community Ment Health J*, 47(1), 24-34. doi: 10.1007/s10597-009-9261-0
- Betancourt, H., & Flynn, P. (2009). The psychology of health: physical health and the role of culture in behavior. In Villarruel, F. A., Carlo, G., Contreras Grau, J. M. et al. (Eds.), *Handbook of US Latino Psychology* (pp. 347–361). Thousand Oaks, CA: Sage Publications.
- Betancourt, H., Flynn, P. M., & Ormseth, S. R. (2011). Healthcare mistreatment and continuity of cancer screening among Latino and Anglo American women in southern california. *Women Health*, 51(1), 1-24. doi: 10.1080/03630242.2011.541853
- Bird, S. T., & Bogart, L. M. (2001). Perceived race-based and socioeconomic status(SES)-based discrimination in interactions with health care providers. *Ethn Dis*, 11(3), 554-563.
- Blanchard, J., & Lurie, N. (2004). R-E-S-P-E-C-T: patient reports of disrespect in the health care setting and its impact on care. *J Fam Pract*, 53(9), 721-730.
- Bonner, G., Ferrans, C. E., Moore-Burke, E., & Gorelick, P. (2005). Determinants of trust and mistrust in physicians as identified by African American care givers. *Afr Res Perspect*, 37(4), 336-342.
- Boulware, L. E., Cooper, L. A., Ratner, L. E., LaVeist, T. A., & Powe, N. R. (2003). Race and trust in the health care system. *Public Health Rep*, 118(4), 358-365.
- Brockner, J., & Siegel, P.A. (1996). Understanding the interaction between procedural and distributive justice: The role of trust. In R.M. Kramer & T.R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 390-413). Thousand Oaks, CA: Sage.
- Burgess, D. J., Ding, Y., Hargreaves, M., van Ryn, M., & Phelan, S. (2008). The association between perceived discrimination and underutilization of needed medical and mental health care in a multi-ethnic community sample. *J Health Care Poor Underserved*, 19(3), 894-911. doi: 10.1353/hpu.0.0063
- Casagrande, Sarah Stark, Gary, Tiffany L., LaVeist, Thomas A., Gaskin, Darrell J., & Cooper, Lisa A. (2007). Perceived Discrimination and Adherence to Medical Care in a Racially Integrated Community. *Journal of General Internal Medicine*, 22(3), 389-395. doi: 10.1007/s11606-006-

0057-4

Centers for Disease Control and Prevention (CDC). *Breast Cancer Rates by Race and Ethnicity*.

Retrieved from <http://www.cdc.gov/cancer/breast/statistics/race.htm> on September 22, 2016.

Chawla, N., Breen, N., Liu, B., Lee, R., & Kagawa-Singer, M. (2015). Asian American women in California: a pooled analysis of predictors for breast and cervical cancer screening. *Am J Public Health, 105*(2), e98-e109. doi: 10.2105/ajph.2014.302250

Cho, J., & Juon, H. S. (2006). Assessing overweight and obesity risk among Korean Americans in California using World Health Organization body mass index criteria for Asians. *Prev Chronic Dis, 3*(3), A79.

Choi, K. S., Lee, S., Park, E. C., Kwak, M. S., Spring, B. J., & Juon, H. S. (2010). Comparison of breast cancer screening rates between Korean women in America versus Korea. *J Womens Health (Larchmt), 19*(6), 1089-1096. doi: 10.1089/jwh.2009.1584

Choi, S. E., & Reed, P. L. (2011). Psychometric validation of a short acculturation scale for Korean immigrants. *Nurs Res, 60*(4), 240-246. doi: 10.1097/NNR.0b013e31822232a0

Clough, J., Lee, S., & Chae, D. H. (2013). Barriers to health care among Asian immigrants in the United States: a traditional review. *J Health Care Poor Underserved, 24*(1), 384-403. doi: 10.1353/hpu.2013.0019

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2 ed.). Hillsdale, NJ: Lawrence Erlbaum.

Corbie-Smith, G., Flagg, E. W., Doyle, J. P., & O'Brien, M. A. (2002). Influence of usual source of care on differences by race/ethnicity in receipt of preventive services. *J Gen Intern Med, 17*(6), 458-464.

Corbie-Smith, G., & Ford, C. L. (2006). Distrust and poor self-reported health. Canaries in the coal mine? *J Gen Intern Med, 21*(4), 395-397. doi: 10.1111/j.1525-1497.2006.00407.x

Crawley, L. M., Ahn, D. K., & Winkleby, M. A. (2008). Perceived medical discrimination and cancer screening behaviors of racial and ethnic minority adults. *Cancer Epidemiol Biomarkers Prev,*

- 17(8), 1937-1944. doi: 10.1158/1055-9965.epi-08-0005
- Cuffee, Y. L., Hargraves, J. L., Rosal, M., Briesacher, B. A., Schoenthaler, A., Person, S., . . . Allison, J. (2013). Reported racial discrimination, trust in physicians, and medication adherence among inner-city African Americans with hypertension. *Am J Public Health, 103*(11), e55-62. doi: 10.2105/ajph.2013.301554
- Dailey, A. B., Kasl, S. V., Holford, T. R., & Jones, B. A. (2007). Perceived racial discrimination and nonadherence to screening mammography guidelines: results from the race differences in the screening mammography process study. *Am J Epidemiol, 165*(11), 1287-1295. doi: 10.1093/aje/kwm004
- de Koning, H. J. (2003). Mammographic screening: evidence from randomised controlled trials. *Ann Oncol, 14*(8), 1185-1189.
- dela Cruz, F. A., Padilla, G. V., & Agustin, E. O. (2000). Adapting a measure of acculturation for cross-cultural research. *J Transcult Nurs, 11*(3), 191-198.
- Do, Y. K., Carpenter, W. R., Spain, P., Clark, J. A., Hamilton, R. J., Galanko, J. A., . . . Godley, P. A. (2010). Race, healthcare access and physician trust among prostate cancer patients. *Cancer Causes Control, 21*(1), 31-40. doi: 10.1007/s10552-009-9431-y
- Eamranond, P. P., Davis, R. B., Phillips, R. S., & Wee, C. C. (2011). Patient-physician language concordance and primary care screening among spanish-speaking patients. *Med Care, 49*(7), 668-672. doi: 10.1097/MLR.0b013e318215d803
- Echeverria, Sandra E., & Carrasquillo, Olveen. (2006). The Roles of Citizenship Status, Acculturation, and Health Insurance in Breast and Cervical Cancer Screening among Immigrant Women. *Medical Care, 44*(8), 788-792.
- Eun, Y., Lee, E. E., Kim, M. J., & Fogg, L. (2009). Breast cancer screening beliefs among older Korean American women. *J Gerontol Nurs, 35*(9), 40-50. doi: 10.3928/00989134-20090731-09
- Fejerman, L., & Ziv, E. (2008). Population differences in breast cancer severity. *Pharmacogenomics, 9*(3), 323-333. doi: 10.2217/14622416.9.3.323

- Ferlay, J., Soerjomataram, I., Dikshit, R., Eser, S., Mathers, C., Rebelo, M., . . . Bray, F. (2015). Cancer incidence and mortality worldwide: sources, methods and major patterns in GLOBOCAN 2012. *Int J Cancer*, *136*(5), E359-386. doi: 10.1002/ijc.29210
- Ferrans, C., Rauscher, G., Akpan, B., Johnson, T., Ramirez, D., Willis, M., & Warnecke, R. (2007). Cultural beliefs contributing to disparities in later-stage breast cancer among newly diagnosed African-American, Latina, and Caucasian women. *Oncology Nursing Forum*, *34*(1), 180-181
- Ferrante, Jeanne M., Ohman-Strickland, Pamela, Hahn, Karissa A., Hudson, Shawna V., Shaw, Eric K., Crosson, Jesse C., & Crabtree, Benjamin F. (2008). Self-report versus Medical Records for Assessing Cancer-Preventive Services Delivery. *Cancer Epidemiology Biomarkers & Prevention*, *17*(11), 2987-2994. doi: 10.1158/1055-9965.EPI-08-0177
- Flynn, P. M., Betancourt, H., & Ormseth, S. R. (2011). Culture, emotion, and cancer screening: an integrative framework for investigating health behavior. *Ann Behav Med*, *42*(1), 79-90. doi: 10.1007/s12160-011-9267-z
- Freburger, J. K., Callahan, L. F., Currey, S. S., & Anderson, L. A. (2003). Use of the Trust in Physician Scale in patients with rheumatic disease: psychometric properties and correlates of trust in the rheumatologist. *Arthritis Rheum*, *49*(1), 51-58. doi: 10.1002/art.10925
- Furukawa, R., Driessnack, M., & Colclough, Y. (2014). A committee approach maintaining cultural originality in translation. *Appl Nurs Res*, *27*(2), 144-146. doi: 10.1016/j.apnr.2013.11.011
- Gilson, L. (2003). Trust and the development of health care as a social institution. *Soc Sci Med*, *56*(7), 1453-1468.
- Gomez, S. L., Clarke, C. A., Shema, S. J., Chang, E. T., Keegan, T. H., & Glaser, S. L. (2010). Disparities in breast cancer survival among Asian women by ethnicity and immigrant status: a population-based study. *Am J Public Health*, *100*(5), 861-869. doi: 10.2105/ajph.2009.176651
- Gomez, S. L., Noone, A. M., Lichtensztajn, D. Y., Scoppa, S., Gibson, J. T., Liu, L., . . . Miller, B. A. (2013). Cancer incidence trends among Asian American populations in the United States, 1990-2008. *J Natl Cancer Inst*, *105*(15), 1096-1110. doi: 10.1093/jnci/djt157

- Gomez, S. L., Quach, T., Horn-Ross, P. L., Pham, J. T., Cockburn, M., Chang, E. T., . . . Clarke, C. A. (2010). Hidden breast cancer disparities in Asian women: disaggregating incidence rates by ethnicity and migrant status. *Am J Public Health, 100 Suppl 1*, S125-131. doi: 10.2105/ajph.2009.163931
- Gonzales, K. L., Harding, A. K., Lambert, W. E., Fu, R., & Henderson, W. G. (2013). Perceived experiences of discrimination in health care: a barrier for cancer screening among American Indian women with type 2 diabetes. *Womens Health Issues, 23(1)*, e61-67. doi: 10.1016/j.whi.2012.10.004
- Goold, S. D. (2002). Trust, distrust and trustworthiness. *J Gen Intern Med, 17(1)*, 79-81.
- Gordon, H. S., Street, R. L., Jr., Sharf, B. F., Kelly, P. A., & Soucek, J. (2006). Racial differences in trust and lung cancer patients' perceptions of physician communication. *J Clin Oncol, 24(6)*, 904-909. doi: 10.1200/jco.2005.03.1955
- Gryn, T., & Gambino, C. (2012). *The foreign born from Asia: 2011*. Retrieved from <https://www.census.gov/prod/2012pubs/acsbr11-06.pdf>
- Gupta, Rashmi, & Yick, Alice G. (2001). Preliminary validation of the acculturation scale on Chinese Americans. *Journal of Social Work Research and Evaluation, 2(1)*, 43-56.
- Halbert, C. H., Armstrong, K., Gandy, O. H., Jr., & Shaker, L. (2006). Racial differences in trust in health care providers. *Arch Intern Med, 166(8)*, 896-901. doi: 10.1001/archinte.166.8.896
- Halbert, C. H., Weathers, B., Delmoor, E., Mahler, B., Coyne, J., Thompson, H. S., . . . Lee, D. (2009). Racial differences in medical mistrust among men diagnosed with prostate cancer. *Cancer, 115(11)*, 2553-2561. doi: 10.1002/cncr.24249
- Hall, M. A., Camacho, F., Dugan, E., & Balkrishnan, R. (2002). Trust in the medical profession: conceptual and measurement issues. *Health Serv Res, 37(5)*, 1419-1439.
- Hall, M. A., Dugan, E., Zheng, B., & Mishra, A. K. (2001). Trust in physicians and medical institutions: what is it, can it be measured, and does it matter? *Milbank Q, 79(4)*, 613-639, v.
- Hammond, W. P. (2010). Psychosocial correlates of medical mistrust among African American men. *Am J*

- Community Psychol*, 45(1-2), 87-106. doi: 10.1007/s10464-009-9280-6
- Han, Y., Williams, R. D., & Harrison, R. A. (2000). Breast cancer screening knowledge, attitudes, and practices among Korean American women. *Oncol Nurs Forum*, 27(10), 1585-1591.
- Hasnain, M., Menon, U., Ferrans, C. E., & Szalacha, L. (2014). Breast cancer screening practices among first-generation immigrant muslim women. *J Womens Health (Larchmt)*, 23(7), 602-612. doi: 10.1089/jwh.2013.4569
- Hausmann, L. R., Jeong, K., Bost, J. E., & Ibrahim, S. A. (2008). Perceived discrimination in health care and use of preventive health services. *J Gen Intern Med*, 23(10), 1679-1684. doi: 10.1007/s11606-008-0730-x
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York: Guilford Publications.
- Haywood Jr, Carlton, Lanzkron, Sophie, Bediako, Shawn, Strouse, John J., Haythornthwaite, Jennifer, Carroll, C. Patrick, . . . for the, Import Investigators. (2014). Perceived Discrimination, Patient Trust, and Adherence to Medical Recommendations Among Persons with Sickle Cell Disease. *Journal of General Internal Medicine*, 29(12), 1657-1662. doi: 10.1007/s11606-014-2986-7
- Heo, H. H., & Braun, K. L. (2014). Culturally tailored interventions of chronic disease targeting Korean Americans: a systematic review. *Ethn Health*, 19(1), 64-85. doi: 10.1080/13557858.2013.857766
- Jacobs, E. A., Rathouz, P. J., Karavolos, K., Everson-Rose, S. A., Janssen, I., Kravitz, H. M., . . . Powell, L. H. (2014). Perceived discrimination is associated with reduced breast and cervical cancer screening: the Study of Women's Health Across the Nation (SWAN). *J Womens Health (Larchmt)*, 23(2), 138-145. doi: 10.1089/jwh.2013.4328
- Juon, H. S., Choi, Y., & Kim, M. T. (2000). Cancer screening behaviors among Korean-American women. *Cancer Detect Prev*, 24(6), 589-601.
- Juon, H. S., Kim, M., Shankar, S., & Han, W. (2004). Predictors of adherence to screening mammography among Korean American women. *Prev Med*, 39(3), 474-481. doi: 10.1016/j.ypmed.2004.05.006
- Juon, H. S., Seo, Y. J., & Kim, M. T. (2002). Breast and cervical cancer screening among Korean

- American elderly women. *Eur J Oncol Nurs*, 6(4), 228-235.
- Kagawa-Singer, M., Pourat, N., Breen, N., Coughlin, S., Abend McLean, T., McNeel, T. S., & Ponce, N. A. (2007). Breast and cervical cancer screening rates of subgroups of Asian American women in California. *Med Care Res Rev*, 64(6), 706-730. doi: 10.1177/1077558707304638
- Kaiser, K., Rauscher, G. H., Jacobs, E. A., Strenski, T. A., Ferrans, C. E., & Warnecke, R. B. (2011). The import of trust in regular providers to trust in cancer physicians among white, African American, and Hispanic breast cancer patients. *J Gen Intern Med*, 26(1), 51-57. doi: 10.1007/s11606-010-1489-4
- Katapodi, M. C., Pierce, P. F., & Facione, N. C. (2010). Distrust, predisposition to use health services and breast cancer screening: results from a multicultural community-based survey. *Int J Nurs Stud*, 47(8), 975-983. doi: 10.1016/j.ijnurstu.2009.12.014
- Kayaniyil, S., Gravely-Witte, S., Stewart, D. E., Higginson, L., Suskin, N., Alter, D., & Grace, S. L. (2009). Degree and correlates of patient trust in their cardiologist. *J Eval Clin Pract*, 15(4), 634-640. doi: 10.1111/j.1365-2753.2008.01064.x
- Keating, N. L., Gandhi, T. K., Orav, E. J., Bates, D. W., & Ayanian, J. Z. (2004). Patient characteristics and experiences associated with trust in specialist physicians. *Arch Intern Med*, 164(9), 1015-1020. doi: 10.1001/archinte.164.9.1015
- Khadilkar, Amole, & Chen, Yue. (2013). Rate of Cervical Cancer Screening Associated with Immigration Status and Number of Years Since Immigration in Ontario, Canada. *Journal of Immigrant and Minority Health*, 15(2), 244-248. doi: 10.1007/s10903-012-9711-6
- Kim, K., Yu, E. S., Chen, E. H., Kim, J. K., & Brintnall, R. A. (1998). Breast Cancer Screening Knowledge and Practices Among Korean American Women. *Asian Am Pac Isl J Health*, 6(2), 263-275.
- King, G., & Zeng, L. (2001). Logistic Regression in Rare Events Data. *Political Analysis*, 9, 137-163.
- Kressin, N. R., Raymond, K. L., & Manze, M. (2008). Perceptions of race/ethnicity-based discrimination: a review of measures and evaluation of their usefulness for the health care setting. *J Health Care*

- Poor Underserved*, 19(3), 697-730. doi: 10.1353/hpu.0.0041
- Lauderdale, D. S., Wen, M., Jacobs, E. A., & Kandula, N. R. (2006). Immigrant perceptions of discrimination in health care: the California Health Interview Survey 2003. *Med Care*, 44(10), 914-920. doi: 10.1097/01.mlr.0000220829.87073.f7
- LaVeist, T. A., Isaac, L. A., & Williams, K. P. (2009). Mistrust of health care organizations is associated with underutilization of health services. *Health Serv Res*, 44(6), 2093-2105. doi: 10.1111/j.1475-6773.2009.01017.x
- Lee, E. E., Fogg, L. F., & Sadler, G. R. (2006). Factors of breast cancer screening among Korean immigrants in the United States. *J Immigr Minor Health*, 8(3), 223-233. doi: 10.1007/s10903-006-9326-2
- Lee, E. E., Nandy, K., Szalacha, L., Park, H., Oh, K. M., Lee, J., & Menon, U. (2016). Korean American Women and Mammogram Uptake. *J Immigr Minor Health*, 18(1), 179-186. doi: 10.1007/s10903-015-0164-6
- Lee, H., Kim, J., & Han, H. R. (2009). Do cultural factors predict mammography behaviour among Korean immigrants in the USA? *J Adv Nurs*, 65(12), 2574-2584. doi: 10.1111/j.1365-2648.2009.05155.x
- Lee, H. Y., Ju, E., Vang, P. D., & Lundquist, M. (2010). Breast and cervical cancer screening disparity among Asian American women: does race/ethnicity matter [corrected]? *J Womens Health (Larchmt)*, 19(10), 1877-1884. doi: 10.1089/jwh.2009.1783
- Lee, H. Y., Stange, M. J., & Ahluwalia, J. S. (2014). Breast Cancer Screening Behaviors Among Korean American Immigrant Women: Findings From the Health Belief Model. *J Transcult Nurs*. doi: 10.1177/1043659614526457
- Lee, Richard M. (2005). Resilience Against Discrimination: Ethnic Identity and Other-Group Orientation as Protective Factors for Korean Americans. *Journal of Counseling Psychology*, 52(1), 36-44. doi: 10.1037/0022-0167.52.1.36
- Lee, S. Y. (2015). Cultural Factors Associated with Breast and Cervical Cancer Screening in Korean

- American Women in the US: An Integrative Literature Review. *Asian Nurs Res (Korean Soc Nurs Sci)*, 9(2), 81-90. doi: 10.1016/j.anr.2015.05.003
- Lee, Y. S., Hofstetter, C. R., Irvin, V. L., Kang, S., Chhay, D., Reyes, W. D., & Hovell, M. F. (2012). Korean American women's preventive health care practices: stratified samples in California, USA. *Health Care Women Int*, 33(5), 422-439. doi: 10.1080/07399332.2011.603869
- Lee, Y. Y., & Lin, J. L. (2009). The effects of trust in physician on self-efficacy, adherence and diabetes outcomes. *Soc Sci Med*, 68(6), 1060-1068. doi: 10.1016/j.socscimed.2008.12.033
- Levy, A. R., Bruen, B. K., & Ku, L. (2012). Health care reform and women's insurance coverage for breast and cervical cancer screening. *Prev Chronic Dis*, 9, E159. doi: 10.5888/pcd9.120069
- Lew, A. A., Moskowitz, J. M., Ngo, L., Wismer, B. A., Wong, J. M., Ahn, Y., & Tager, I. B. (2003). Effect of provider status on preventive screening among Korean-American women in Alameda County, California. *Prev Med*, 36(2), 141-149.
- Li, Y. C. (2012). Delay in seeking medical evaluation for suspicious breast symptoms (Unpublished doctoral dissertation thesis). University of Illinois at Chicago, Illinois.
- Ma, G. X., Shive, S. E., Wang, M. Q., & Tan, Y. (2009). Cancer screening behaviors and barriers in Asian Americans. *Am J Health Behav*, 33(6), 650-660.
- Mainous, A. G., 3rd, Kern, D., Hainer, B., Kneuper-Hall, R., Stephens, J., & Geesey, M. E. (2004). The relationship between continuity of care and trust with stage of cancer at diagnosis. *Fam Med*, 36(1), 35-39.
- Marin G, Sabogal F, Marin BV, Otero-Sabogal F, Perez-Stable EJ. (1987). Development of a short acculturation scale for Hispanics. *Hispanic Journal of Behavioral Sciences*, 9(2), 183-205.
- Martinez, Gladys, Marín, Barbara V., & Schoua-Glusberg, Alisú. (2006). Translating From English to Spanish: The 2002 National Survey of Family Growth. *Hispanic Journal of Behavioral Sciences*, 28(4), 531-545. doi: <http://dx.doi.org/10.1177/0739986306292293>
- Maxwell, A. E., Bastani, R., & Warda, U. S. (2000). Demographic predictors of cancer screening among Filipino and Korean immigrants in the United States. *Am J Prev Med*, 18(1), 62-68.

- Mayer, Roger C., Davis, James H., & Schoorman, F. David. (1995). An integrative model of organizational trust. *The Academy of Management Review*, 20(3), 709-734. doi: <http://dx.doi.org/10.2307/258792>
- Mechanic, D. (1998). Managed care, rationing, and trust in medical care. *J Urban Health*, 75(1), 118-122. doi: 10.1007/bf02344933
- Menon, U., Szalacha, L., Prabhughate, A., & Kue, J. (2014). Correlates of colorectal cancer screening among South Asian immigrants in the United States. *Cancer Nurs*, 37(1), E19-27. doi: 10.1097/NCC.0b013e31828db95e
- Miller, B. A., Chu, K. C., Hankey, B. F., & Ries, L. A. (2008). Cancer incidence and mortality patterns among specific Asian and Pacific Islander populations in the U.S. *Cancer Causes Control*, 19(3), 227-256. doi: 10.1007/s10552-007-9088-3
- Mohseni, M., & Lindstrom, M. (2007). Social capital, trust in the health-care system and self-rated health: the role of access to health care in a population-based study. *Soc Sci Med*, 64(7), 1373-1383. doi: 10.1016/j.socscimed.2006.11.023
- Mollborn, Stefanie, Stepanikova, Irena, & Cook, Karen S. (2005). Delayed Care and Unmet Needs among Health Care System Users: When Does Fiduciary Trust in a Physician Matter? *Health Services Research*, 40(6p1), 1898-1917. doi: 10.1111/j.1475-6773.2005.00457.x
- Mouton, C. P., Carter-Nolan, P. L., Makambi, K. H., Taylor, T. R., Palmer, J. R., Rosenberg, L., & Adams-Campbell, L. L. (2010). Impact of perceived racial discrimination on health screening in black women. *J Health Care Poor Underserved*, 21(1), 287-300. doi: 10.1353/hpu.0.0273
- Moyerman., D. R., Forman., B. D. (1992). Acculturation and adjustment: A meta-analytic study. *Hispanic Journal of Behavioral Sciences*. 14, 163-200.
- Musa, D., Schulz, R., Harris, R., Silverman, M., & Thomas, S. B. (2009). Trust in the health care system and the use of preventive health services by older black and white adults. *Am J Public Health*, 99(7), 1293-1299. doi: 10.2105/ajph.2007.123927
- Nelson, Alan. (2002). Unequal treatment: confronting racial and ethnic disparities in health care. *Journal*

- of the National Medical Association*, 94(8), 666-668.
- Ngo-Metzger, Q., Legedza, A. T., & Phillips, R. S. (2004). Asian Americans' reports of their health care experiences. Results of a national survey. *J Gen Intern Med*, 19(2), 111-119.
- Noh, Samuel, & Kaspar, Violet. (2003). Perceived Discrimination and Depression: Moderating Effects of Coping, Acculturation, and Ethnic Support. *American Journal of Public Health*, 93(2), 232-238. doi: 10.2105/AJPH.93.2.232
- Noh, Samuel, Kaspar, Violet, & Wickrama, K. A. S. (2007). Overt and Subtle Racial Discrimination and Mental Health: Preliminary Findings for Korean Immigrants. *American Journal of Public Health*, 97(7), 1269-1274. doi: 10.2105/AJPH.2005.085316
- O'Malley, A. S., Sheppard, V. B., Schwartz, M., & Mandelblatt, J. (2004). The role of trust in use of preventive services among low-income African-American women. *Prev Med*, 38(6), 777-785. doi: 10.1016/j.ypmed.2004.01.018
- Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: a meta-analytic review. *Psychol Bull*, 135(4), 531-554. doi: 10.1037/a0016059
- Pasick, Rena J., D'Onofrio, Carol N., & Otero-Sabogal, Regina. (1996). Similarities and Differences Across Cultures: Questions to Inform a Third Generation for Health Promotion Research. *Health Education & Behavior*, 23(1), S142-S161. doi: 10.1177/109019819602301S11
- Pearlin, L. I. (1989). The sociological study of stress. *J Health Soc Behav*, 30(3), 241-256.
- Peek, M. E., Nunez-Smith, M., Drum, M., & Lewis, T. T. (2011). Adapting the everyday discrimination scale to medical settings: reliability and validity testing in a sample of African American patients. *Ethn Dis*, 21(4), 502-509.
- Pourat, N., Kagawa-Singer, M., Breen, N., & Sriipatana, A. (2010). Access versus acculturation: identifying modifiable factors to promote cancer screening among Asian American women. *Med Care*, 48(12), 1088-1096. doi: 10.1097/MLR.0b013e3181f53542
- Pourat, N., Lubben, J., Yu, H., & Wallace, S. (2000). Perceptions of health and use of ambulatory care: differences between Korean and White elderly. *J Aging Health*, 12(1), 112-134.

- Rauscher, Garth H., Johnson, Timothy P., Cho, Young Ik, & Walk, Jennifer A. (2008). Accuracy of Self-Reported Cancer-Screening Histories: A Meta-analysis. *Cancer Epidemiology Biomarkers & Prevention*, 17(4), 748-757. doi: 10.1158/1055-9965.EPI-07-2629
- Reyes, Adriana M., & Miranda, Patricia Y. (2015). Trends in Cancer Screening by Citizenship and Health Insurance, 2000–2010. *Journal of Immigrant and Minority Health*, 17(3), 644-651. doi: 10.1007/s10903-014-0091-y
- Ring, Jeffrey M. (2009). Psychology and Medical Education: Collaborations for Culturally Responsive Care. *Journal of Clinical Psychology in Medical Settings*, 16(1), 120-126. doi: 10.1007/s10880-008-9141-8
- Rolfe, A., Cash-Gibson, L., Car, J., Sheikh, A., & McKinstry, B. (2014). Interventions for improving patients' trust in doctors and groups of doctors. *Cochrane Database Syst Rev*(3), CD004134. doi: 10.1002/14651858.CD004134.pub3
- Rose, A., Peters, N., Shea, J. A., & Armstrong, K. (2004). Development and testing of the health care system distrust scale. *J Gen Intern Med*, 19(1), 57-63.
- Rowe, Rosemary, & Calnan, Michael. (2006). Trust relations in health care: developing a theoretical framework for the "new" NHS. *Journal of Health Organization and Management*, 20(5), 376-396. doi: 10.1108/14777260610701777
- Ryu, S. Y., Crespi, C. M., & Maxwell, A. E. (2013). What factors explain disparities in mammography rates among Asian-American immigrant women? A population-based study in California. *Womens Health Issues*, 23(6), e403-410. doi: 10.1016/j.whi.2013.08.005
- Schueler, K. M., Chu, P. W., & Smith-Bindman, R. (2008). Factors associated with mammography utilization: a systematic quantitative review of the literature. *J Womens Health (Larchmt)*, 17(9), 1477-1498. doi: 10.1089/jwh.2007.0603
- Shariff-Marco, S., Klassen, A. C., & Bowie, J. V. (2010). Racial/ethnic differences in self-reported racism and its association with cancer-related health behaviors. *Am J Public Health*, 100(2), 364-374. doi: 10.2105/ajph.2009.163899

- Shavers, V. L., Fagan, P., Jones, D., Klein, W. M., Boyington, J., Moten, C., & Rorie, E. (2012). The state of research on racial/ethnic discrimination in the receipt of health care. *Am J Public Health, 102*(5), 953-966. doi: 10.2105/ajph.2012.300773
- Shea, J. A., Micco, E., Dean, L. T., McMurphy, S., Schwartz, J. S., & Armstrong, K. (2008). Development of a revised Health Care System Distrust scale. *J Gen Intern Med, 23*(6), 727-732. doi: 10.1007/s11606-008-0575-3
- Sheppard, V. B., Wang, J., Yi, B., Harrison, T. M., Feng, S., Huerta, E. E., & Mandelblatt, J. S. (2008). Are health-care relationships important for mammography adherence in Latinas? *J Gen Intern Med, 23*(12), 2024-2030. doi: 10.1007/s11606-008-0815-6
- Simon, M. A., Zhang, M., & Dong, X. (2014). Trust in physicians among U.S. chinese older adults. *J Gerontol A Biol Sci Med Sci, 69 Suppl 2*, S46-53. doi: 10.1093/gerona/glu174
- Simonds, V. W., Colditz, G. A., Rudd, R. E., & Sequist, T. D. (2011). Cancer screening among Native Americans in California. *Ethn Dis, 21*(2), 202-209.
- Siu, Albert L., & U. S. Preventive Services Task Force. (2016). Screening for Breast Cancer: U.S. Preventive Services Task Force Recommendation Statement. *Annals of internal medicine, 164*(4), 279. doi: 10.7326/M15-2886
- Smedley, B.D., Stith, A. Y., & Nelson, A.R. (Eds.)(2003), *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington DC: The National Academy of Sciences.
- Suh, E. E. (2008). The sociocultural context of breast cancer screening among Korean immigrant women. *Cancer Nurs, 31*(4), E1-10. doi: 10.1097/01.NCC.0000305742.56829.fc
- Talcott, J. A., Spain, P., Clark, J. A., Carpenter, W. R., Do, Y. K., Hamilton, R. J., . . . Godley, P. A. (2007). Hidden barriers between knowledge and behavior: the North Carolina prostate cancer screening and treatment experience. *Cancer, 109*(8), 1599-1606. doi: 10.1002/cncr.22583
- Tarn, D. M., Meredith, L. S., Kagawa-Singer, M., Matsumura, S., Bito, S., Oye, R. K., . . . Wenger, N. S. (2005). Trust in one's physician: the role of ethnic match, autonomy, acculturation, and religiosity among Japanese and Japanese Americans. *Ann Fam Med, 3*(4), 339-347. doi: 10.1370/afm.289

- Tejeda, Silvia, Gallardo, Rani I., Ferrans, Carol Estwing, & Rauscher, Garth H. (2016). Breast cancer delay in Latinas: the role of cultural beliefs and acculturation. *Journal of Behavioral Medicine*. doi: 10.1007/s10865-016-9789-8
- The Harris Poll (2010). *Virtually No Change in Annual Harris Poll Confidence Index from Last Year*. Retrieved from <http://media.theharrispoll.com/documents/Harris-Interactive-Poll-Research-Education-Confidence-2010-03.pdf><http://www.theharrispoll.com/> on March, 2016.
- The Henry J. Kaiser Family Foundation. (2008). *Race, Ethnicity, and Health Care*. Retrieved from <https://kaiserfamilyfoundation.files.wordpress.com/2013/01/7745.pdf> on April, 2016
- The U.S. Bureau of labor Statistics. (2012). *The Asian Population: 2010*. Retrieved from <https://www.census.gov/prod/cen2010/briefs/c2010br-11.pdf> on March, 2016
- Thoits, P. A. (2010). Stress and health: major findings and policy implications. *J Health Soc Behav*, 51 Suppl, S41-53. doi: 10.1177/0022146510383499
- Thom, D. H., Ribisl, K. M., Stewart, A. L., & Luke, D. A. (1999). Further validation and reliability testing of the Trust in Physician Scale. The Stanford Trust Study Physicians. *Med Care*, 37(5), 510-517.
- Thompson, C. A., Gomez, S. L., Chan, A., Chan, J. K., McClellan, S. R., Chung, S., . . . Palaniappan, L. P. (2014). Patient and provider characteristics associated with colorectal, breast, and cervical cancer screening among Asian Americans. *Cancer Epidemiol Biomarkers Prev*, 23(11), 2208-2217. doi: 10.1158/1055-9965.epi-14-0487
- Thompson, Hayley S., Valdimarsdottir, Heiddis B., Winkel, Gary, Jandorf, Lina, & Redd, William. (2004). The Group-Based Medical Mistrust Scale: psychometric properties and association with breast cancer screening. *Preventive Medicine*, 38(2), 209-218. doi: 10.1016/j.ypmed.2003.09.041
- Torre, L. A., Sauer, A. M., Chen, M. S., Jr., Kagawa-Singer, M., Jemal, A., & Siegel, R. L. (2016). Cancer statistics for Asian Americans, Native Hawaiians, and Pacific Islanders, 2016: Converging incidence in males and females. *CA Cancer J Clin*. doi: 10.3322/caac.21335
- Wang, F., McLafferty, S., Escamilla, V., & Luo, L. (2008). Late-Stage Breast Cancer Diagnosis and Health Care Access in Illinois. *Prof Geogr*, 60(1), 54-69. doi: 10.1080/00330120701724087

- Whetten, K., Leserman, J., Whetten, R., Ostermann, J., Thielman, N., Swartz, M., & Stangl, D. (2006). Exploring lack of trust in care providers and the government as a barrier to health service use. *Am J Public Health, 96*(4), 716-721. doi: 10.2105/ajph.2005.063255
- Williams, D. R., Yan, Yu, Jackson, J. S., & Anderson, N. B. (1997). Racial Differences in Physical and Mental Health: Socio-economic Status, Stress and Discrimination. *J Health Psychol, 2*(3), 335-351. doi: 10.1177/135910539700200305
- Williams, David R., & Mohammed, Selina A. (2009). Discrimination and racial disparities in health: evidence and needed research. *Journal of Behavioral Medicine, 32*(1), 20-47. doi: 10.1007/s10865-008-9185-0
- Willis, Gordon B., Royston, Patricia, & Bercini, Deborah. (1991). The use of verbal report methods in the development and testing of survey questionnaires. *Applied Cognitive Psychology, 5*(3), 251-267. doi: 10.1002/acp.2350050307
- Williams, R. (2016). *Analyzing rare events with logistic regression*. University of Norte Dame. Retrieved from <https://www3.nd.edu/~rwilliam/stats3/RareEvents.pdf> on September, 2016.
- Wisner, B. A., Moskowitz, J. M., Chen, A. M., Kang, S. H., Novotny, T. E., Min, K., . . . Tager, I. B. (1998). Mammography and clinical breast examination among Korean American women in two California counties. *Prev Med, 27*(1), 144-151. doi: 10.1006/pmed.1997.0259
- Yang, T. C., Matthews, S. A., & Hillemeier, M. M. (2011). Effect of health care system distrust on breast and cervical cancer screening in Philadelphia, Pennsylvania. *Am J Public Health, 101*(7), 1297-1305. doi: 10.2105/ajph.2010.300061
- Yoshioka, Marianne R., Gilbert, Louisa, El-Bassel, Nabila, & Baig-Amin, Malahat. (2003). Social Support and Disclosure of Abuse: Comparing South Asian, African American, and Hispanic Battered Women. *Journal of Family Violence, 18*(3), 171-180.
- Yu, M. Y., Hong, O. S., & Seetoo, A. D. (2003). Uncovering factors contributing to under-utilization of breast cancer screening by Chinese and Korean women living in the United States. *Ethn Dis, 13*(2), 213-219.

VITA

NAME: HYE CHONG HONG

EDUCATION: B.S.N., Nursing Science, University of Illinois at Chicago, Chicago, 1997
 M.S.N., Nursing Science, Yonsei University, Seoul, 2010
 Ph.D., Nursing Science, University of Illinois at Chicago, 2016

TEACHING: NCLEX instructor, NCLEX Korea, Seoul, 2008-2009
 Teaching Assistant, University of Illinois at Chicago, College of Nursing, Chicago, 2013-2014

EMPLOYMENT Kindred hospital, telemetry, RN, Chicago, 1998-2001
 Illinois Masonic Medical Center, telemetry, RN, 2001-2007
 Illinois Masonic Medical Center, telemetry, RN, 2010-current

HONORS Dean's Scholarship at Yonsei University, 2008-2010
 College of Nursing Scholarship at University of Illinois at Chicago, 2011-2013

LICENSURE Registered Nurse, State of Illinois, 1998-present

PROFESSIONAL MEMBERSHIPS Korean Society of Nursing Science, 2009-present
 Sigma Theta Tau International, 2009-present
 Korean Academy of Community Health Nursing, 2009-present

ABSTRACT Hong, H.C., Park, C.G., Ferrans, C, Lee, H., Quinne, L., and Collins, E. (April, 2017). Examining the Effects of Perceived Discrimination and Trust on Breast Cancer Screening Adherence among Korean American Women
 Poster presentation at the annual Midwest Nursing Research Society (MNRS) conference. In progress.

Hong, H.C. (Dec, 2009). Family Planning Knowledge, Attitude, and Behaviors of Adolescents in Rural Areas of Ethiopia. Poster presentation at the Winter Conference of Korean Academy of Community Health Nursing Daegu, Korea.

Yoo. J.Y., Ko, J.S., Kim, H.H., & Hong, H.C. (Nov, 2009). Predictors for Health Practice Behaviors in Korean Elderly; Analysis of Korea National Health and Nutrition Examination Surveys 2005. Poster presentation at the Conference of Korean Gerontological Nursing Society, Seoul, Korea.

Ko, J.S., Yoo, J.Y., & Hong, H.C. (Apr, 2010). Predictors for Health Practice Behaviors in Adult and Middle-aged Groups; Analysis of Korea National Health and Nutrition Examination Surveys 2005. Poster presentation at the Spring Conference of Korean Society of Public Health Nursing, Seoul, Korea.