

Finding socioeconomic and geographic factors associated with breast cancer screening behavior in Korean immigrant women in the U.S.

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Overview

Background:

- Breast cancer is common among Korean immigrant women, with cancer being the leading cause of death for Korean Americans (Oh et al., 2016).
- Breast cancer screening rates of Korean American women are considerably lower than the national average, creating an increased risk of later diagnosis and higher mortality rate (Jin et. al, 2019).
- Existing research has identified several factors that influence screening uptake of Korean American women:
 - Sociodemographic factors (age, marital status, etc.).
 - Knowledge and perceptions about screening.
 - Access to health services (healthcare and a primary physician) (Oh et al., 2016).
 - Self-efficacy (Jin et. al, 2019).
- No studies examine how geographical location (rural vs urban) impact breast cancer screening in Korean immigrant women in the US.

Research Objective:

- The purpose of this research is to examine associated factors of Korean immigrant women's breast cancer screening behavior, focusing on socioeconomic and geographic variables.

Acknowledgement:

This study as a part of Dr. Mi Hwa Lee's project funded by the Division of Research, Economic Development and Engagement, College of Health and Human Performance, School of Social Work at ECU; Mr. Crawford received ECU's Undergraduate Research and Creative Activity Award to work on this study.

Methods

Research Design:

- A cross-sectional research design.

Data Collection:

- Survey with 538 Korean immigrant women in May 2019 – November 2019
- Eligibility criteria:
 - Korean woman born and raised in Korea, and then immigrated to the U.S.
 - Currently residing in North Carolina
 - Between 40 and 79 years old
 - Have never been diagnosed with breast cancer

Measures:

- Dependent variable: self-reported receipt of breast cancer screening with mammography.
- Independent variables: Health insurance, regular check ups, geographical location (urban vs rural), education, age, time in the United States, and income.

Data Analysis

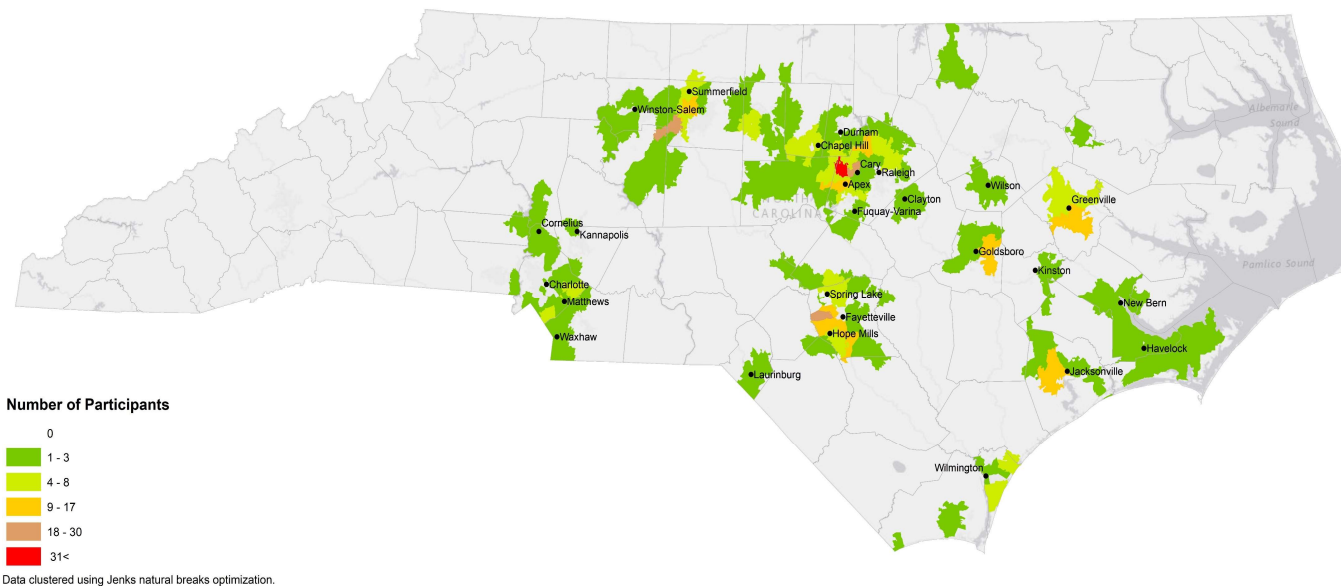
- Data were analyzed using IBM SPSS Statistics Version 26.
- Maps were created using ESRI ArcMap.

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Methods (Cont.)

Study Participation by Zip Code



This map represents the frequency of participants by five digit zip code. Data consists of self reported zip codes from 511 Korean American women, recruited at various community based sites such as churches, community events, grocery stores.

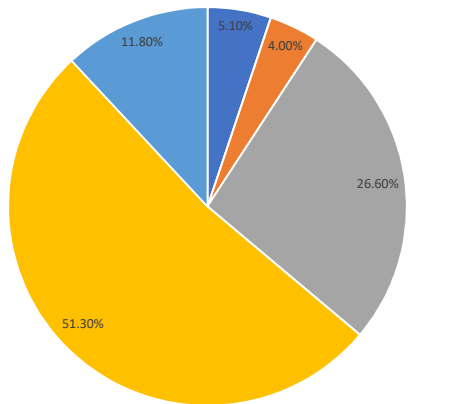
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Demographic Characteristics

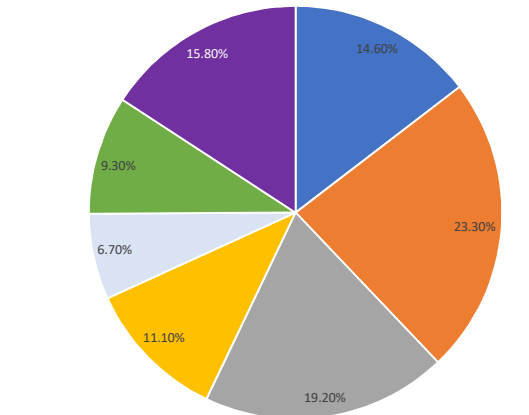
- Age (yrs): M = 55.63 (SD = 9.24)
- Length of living in U.S. (yrs): M = 23.80(SD = 12.10)
- Age (yrs) at time of immigration to the U.S.: M = 32.17(SD = 9.59)

Education Level



■ Completed elementary school ■ Completed middle school
■ Completed high school or equivalent ■ Completed college or university
■ Completed graduate school

Income



■ less than 25k ■ 25k - 49,999k ■ 50k - 74,999k
■ 75k - 94,999k ■ 95k - 104,999k ■ 105k - 124,999k
■ 125k +

Ability to speak English	Frequency	Percent
cannot speak English	31	5.90%
Poor	163	31.00%
Fair	207	39.40%
Good	73	13.90%
Very good	42	8.00%
Excellent	9	1.70%
Total	526	100%

How participants heard about the study	Frequency	Percent
Religious organization	359	69.40%
Social service center	5	1.00%
Family member	11	2.10%
Friend	79	15.30%
other	62	12.00%
No answer	1	0.20%
Total	516	100.00%

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Results

		Receipt of mammogram within 2 years		χ^2
		Yes	No	
Health Insurance	Yes	295 (90.5%)	129 (66.5%)	46.973
	No	31 (9.5%)	64 (33%)	
Regular check- up	Yes	301 (91.8%)	81 (41.5%)	156.694
	No	27 (8.2%)	114 (58.5%)	
Geographical location	Rest of NC	210 (63.8%)	135 (69.6%)	1.802
	Eastern NC	119 (36.2%)	59 (30.4%)	
Education	High School graduate or less	118 (36.3%)	69 (35.6%)	0.029
	At least college	207 (63.7%)	125 (64.4%)	
Income	under 49,999k	100 (31.7%)	92 (48.2%)	13.617
	over 50,000k	215 (68.3%)	99 (51.8%)	

	Receipt of mammogram within 2 years				t-value
	No		Yes		
	Mean	SD	Mean	SD	
Age	53.45	8.906	56.92	9.199	4.235
Time living in US	20.649	11.392	25.669	12.133	4.751

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Results

- The Chi-square tests found a statistically significant correlation between receipt of a mammogram within the previous two years and health insurance, receiving regular check-ups, and income.
- T-tests indicated that both age and amount of time spent living in the United States are correlated with receiving a mammogram within the last two years.

Next Steps

This study indicates that health insurance, receiving regular checkups, income, age, and time spent living in the United States impact the screening behavior of Korean American women in North Carolina. The identification of these variables will allow for the creation of a conceptual framework using Andersen's healthcare utilization model, in which regression analysis can determine the level of impact they have on screening uptake. The identification of these variables as significant is in accordance with existing literature, furthering the call for targeted interventions to improve Korean American Screening uptake. Moreover, these findings highlight which set of known Korean American screening barriers exist in North Carolina, allowing for the creation of interventions tailored to the state.

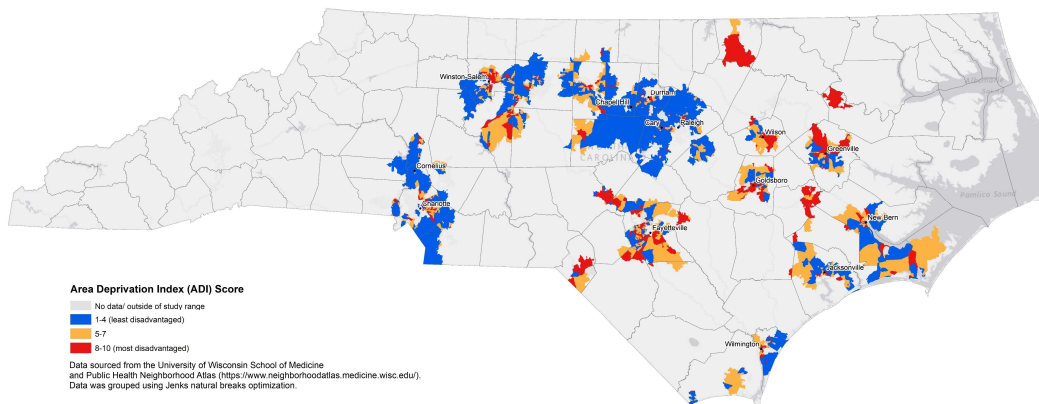
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Next Steps (Cont.)

Although geographic location was not found to be a predictor of mammogram uptake, Korean American women living in urban and rural locations may still have different predisposing factors to screening. One such factor may be the Area Deprivation Index (ADI), a census block level socioeconomic scale created by the university of Wisconsin. The maps below depict the ADI alongside screening behavior by zip code for the study area. A visual examination is unable to create a correlation; this will require further inspection with regression analysis.

ADI by Study Participation Zip Code



Respondents who have received a mammogram within the last two years by zip code

