

The Effectiveness of Interventions to Increase Mammography Uptake among **Non-Adherent Asian American Women: A meta-analysis**

Li-Ting Huang^{1,3}, PhD., RN, Joshua Longcoy^{1,3}, MPH, Chun-Yi Tai², PhD, RN, Judy H. Wang³, PhD, Kelly Sullivan¹, PhD ¹ Jiann-Ping Hsu College of Public Health, Georgia Southern University ²College of Nursing, National Taipei University of Nursing and Health Sciences

³ Cancer Prevention and Control Program, Lombardi Comprehensive Cancer Center, Georgetown University Medical Center

INTRODUCTION

- Mammography utilization is relatively low in Asian American women. Only 55% aged 45 years and older in 2018 and 71% aged 50-74 years had breast cancer screening within the past 2 years, which is lower than the target rate, 76.8%, set by Healthy People 2020.
- Several educational interventions were developed based Chinese American women. on the results of prior studies to assist Asian American women in overcoming identified obstacles. However, the inconsistency in the effectiveness of current interventions may not help future studies to understand which component(s) of educational interventions are effective to increase mammography uptake.

Purpose

• The purpose of this study was 1) to estimate the overall effects of existing educational interventions developed over the last decade to increase mammography uptake for Asian American women and 2) to identify what kind(s) of teaching strategies can provide a better effect.

METHODS

Eligibility Criteria and Endpoints

• Two reviewers independently conducted systematic search to identify initial pool of candidate studies using the following inclusion criteria: 1) randomized clinical trials reporting the outcome of mammography completion rates before and after interventions; 2) Asian American women; 3) published from January 2010 to February 2020, and 4) written in English.

Information Sources and Search

- PubMed, Ovid MEDLINE, Web of Science, and Cochrane Library were utilized to conduct the systematic search in January 2020.
- The combinations of keyword phrases, including *early* detection of cancer [Mesh], Asian Americans [Mesh], breast neoplasms [Mesh], mammography [Mesh], and *mammogram* were used along with Boolean logic to construct the searches.
- Two search limits, publication types and publication dates, were also included when searching for initial pool of potential studies.

<u>Analysis</u>

- Fixed and random-effects models were performed along with forest plots to provide effect sizes and 95% confidence intervals across studies and overall estimated Log odds ratios (OR).
- The heterogeneity was assessed by calculating I². Sensitivity analysis and publication bias were also examined.

Table 2. I Confidenc Study Types Overall (n = 8)**Group vs** Individual Setting (n = 4)Culturally Sensitive (n = 6)Figure 2. Forest Plots Individually Tailored Wu & Lin, 2015 (n = 4)Lee – Lin et al., 2015 Lee et al., 2017(a) Multi-Han et al., 2017 strategy Lee et al., 2014 (1 vs ≥ 2) Wang et al., 2012 Wang et al., 2012 (n = 5)lee et al., 2017(b) **Discussion & Conclusions** _____ Fixed Over the past decade, despite cancer disparities existing in Random Asian Americans as well as heterogeneity within the Asian American population, there are only seven interventions developed and investigated through randomized clinical trials Log – odds ratio

- (Figure 1 & Table 1).

RESULTS A total of 7 randomized clinical trial studies were identified, involving interventions that used an individually tailored, culturally sensitive, individual/group setting, and/or having more than one strategy (hereafter multi-strategy) to facilitate mammography uptake for Asian American women Among these 7 studies, 4 were specifically developed for Korean American women and 3 for Most of the individually tailored interventions either had navigation assistance to overcome participants' barriers/needs or delivered messages based on an individual assessment at baseline. Interventions that are culturally sensitive involved helping participants cope with cultural beliefs, such as discussing fatalism, modesty, and/or collectivism. Figure 1. PRISMA Flow Diagram dditional records identified ecords identified through through other sources database searching (n = 0) (n = 173)Records after duplicates removed (n = 35) Records excluded Records screened (n = 123) (n = 138) Full-text articles Full-text articles excluded assessed for eligibility with reason (n = 15) (n = 8) 2 Quasi-experimental 2 Community-based • 2 Did not measure receip of mammography I secondarv data analysi 1 included Pacific Studies included i Islanders uantitative synthesi (meta-analysis)



Table 1. Summary and Characteristics of the Identified Studies

Studies	Interve Total (n)	ention Group Screened (n)	<u>Cont</u> Total (n)	<u>rol Group</u> Screened (n)	Multi- strategy	Setting	Culturally Sensitive	Individually Tailored
Wang et al., 2012	225	77 (34.2%)	222	60 (27.0%)	Νο	Individual	Yes	Νο
Wang et al., 2012	217	72 (33.2%)	222	60 (27.0%)	No	Individual	No	No
Lee et al., 2014	211	71 (33.6%)	217	41 (18.9%)	Yes	Group	Yes	Νο
Wu & Lin, 2015	96	34 (35.4%)	93	27 (29.0%)	No	Individual	Yes	Yes
Lee-Lin et al., 2015	147	87 (59.1%)	153	28 (18.3%)	Yes	Group	Yes	Yes
Lee et al., 2017(a)	60	45 (75.0%)	60	18 (30.0%)	Yes	Individual	Yes	Yes
Han et al., 2017	278	111 (39.9%)	282	20 (7.09%)	Yes	Group	Νο	Yes
Lee et al., 2017(b)	23	5 (21.7%)	32	4 (12.5%)	Yes	Group	Yes	No

a greater impact.

women.

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stimated Combined Effect Sizes with te Intervals for Each Intervention Type							
Fixed Log OR	2	Random Log OR					
1.93 [0.75, 1.12]	88.6%	1.05 [0.48, 1.62]					
1.48 [1.21, 1.76]	84.8%	1.45 [0.68, 2.23]					
0.89 [0.66, 1.11]	84.3%	0.99 [0.40, 1.58]					
1.61 [1.32, 1.91]	87.4%	1.57 [0.72, 2.41]					
1.53 [1.27, 1.79]	80.8%	1.55 [0.90, 2.20]					

to evaluate the effectiveness of interventions on mammography uptake for Korean and Chinese American

Educational intervention programs are generally effective to increase mammography uptake for women who are not adherent to the breast cancer screening guidelines.

Future studies, when developing interventions for minority populations, may consider to deliver interventions in group settings or use strategies that tailor to individual needs to yield

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