



RANDOMIZED CONTROLLED TRIAL OF THE EFFECT OF LAY HEALTH ADVISOR INTERVENTION ON CHILD'S CARIES PREVENTION BEHAVIORS IN IMMIGRANT MOTHERS

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Date: April 29, 2015

Introduction

- Over 130,000 immigrant brides were married in Taiwan between 1987 and 2010, among whom 82% were **Vietnamese** or **Indonesian** women.
- Immigrant women have **difficulty accessing** the health care system because of **language barriers, cultural conflicts, social and interpersonal isolation, and a lack of support systems**. (Yang and Wang, 2003)

Oral Health Disparities of Children among Southeast Asian Immigrant Women in Arranged Transnational Marriages in Taiwan

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Oral Health Disparities

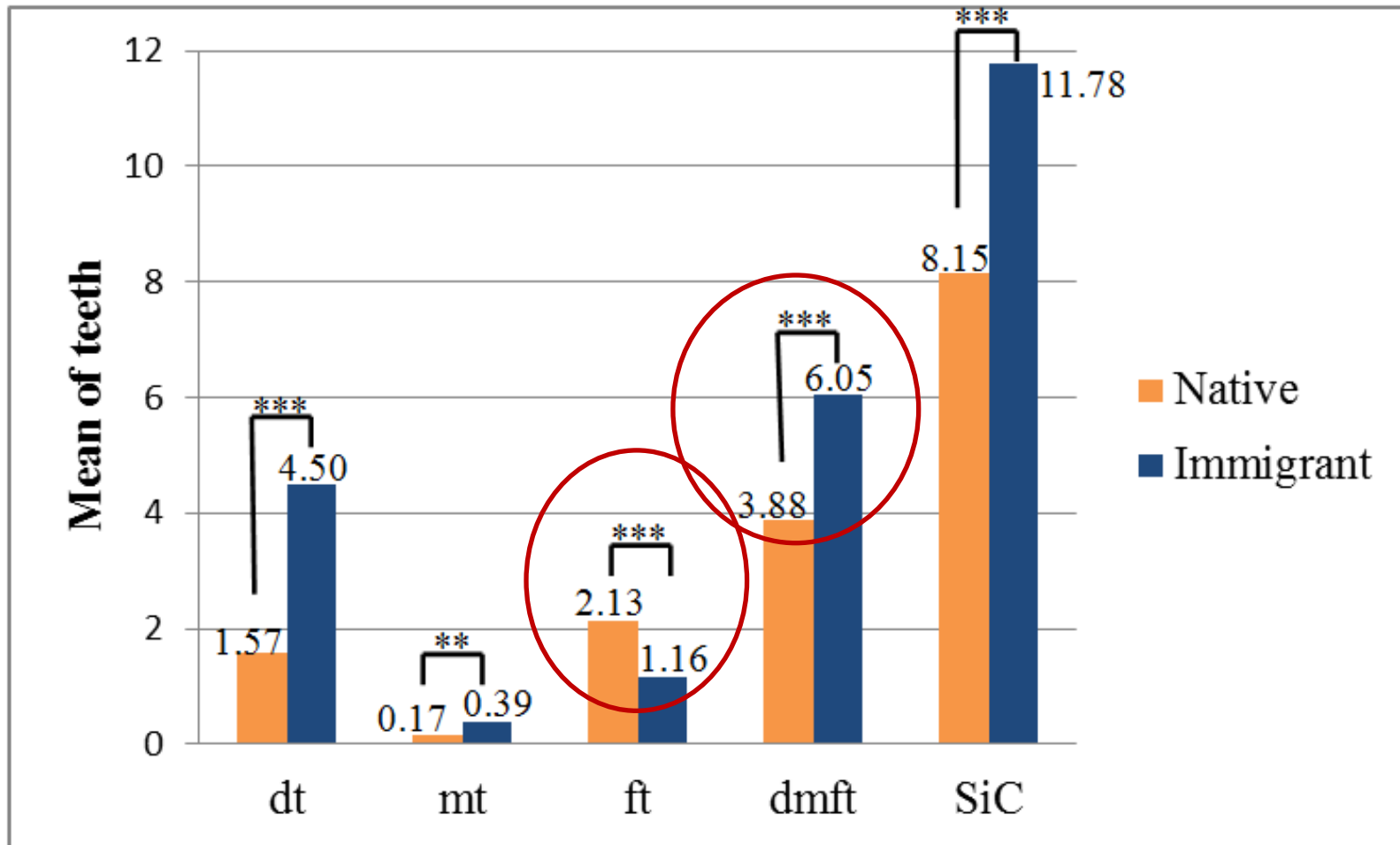


Figure 1. Comparison of dental caries between native and immigrant children. dt= decay teeth; mt= missing teeth; ft= filling teeth; dmft= caries index; SiC=Significant Caries index

P<0.01; *P<0.001

Lin YC et al. 2014

RESEARCH ARTICLE

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Immigrant-native differences in caries-related knowledge, attitude, and oral health behaviors: a cross-sectional study in Taiwan

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Abstract

Background: With the growing number of transnational marriages in Taiwan, oral health disparities have become a public health issue. This study assessed immigrant-native differences in oral health behaviors of urban mothers and their children.

Methods: We used the baseline data of an oral health promotion program to examine the immigrant-native differences in caries-related knowledge, attitude, and oral health behaviors. A cross-sectional study was conducted to collect data from mothers in urban area, Taiwan. A total of 150 immigrant and 440 native mothers completed the self-report questionnaires. Logistic regression models analyzed the racial differences in oral health behaviors.

Results: Approximately 37% of immigrant mothers used dental floss, 25% used fluoride toothpaste, and only 13.5% of them regularly visited a dentist. Less than 40% of immigrant mothers brush their children's teeth before aged one year, 45% replaced child's toothbrush within 3 months, and only half of the mothers regularly took their child to the dentist. Immigrant mothers had lower level of caries-related knowledge and attitudes than native mothers ($p < .001$). Compared to native group, the immigrant mothers were less likely to use of dental floss ([Adjusted odds ratio (aOR) = 0.35], fluoride toothpaste (aOR = 0.29), visit a dentist in the past 2 years (aOR = 0.26), and take their children to regular dental check-up (aOR = 0.38); whereas, they were more likely to not consume sweeten beverages (aOR = 3.13).

Conclusions: The level of caries-related knowledge, attitudes and oral health behaviors were found lower in immigrant mothers than native ones. The findings suggested cross-cultural caries prevention programs aimed at reducing immigrant-native disparities in child oral health care must be developed for these immigrant minorities.

Keywords: Attitudes, Behavior, Dental caries, Immigrants, Health care

Lay Health Advisor Strategy

- Evidence suggests that the use of ***Lay Health Advisor (LHA)*** is an effective strategy for reducing or eliminating health disparities. (Gwede et al., 2012; Walton et al., 2012)
- **LHAs**—also known as natural helpers, ***community health workers***, and frontline workers— are lay personnel employed to serve as a link between professional health care staff and the community.

Justification & Objective

- Although LHA approach was commonly used in promoting cancer screening and other fields, neither in dental field nor oral health promotion.
- The 5-year LHA Approach to Promote Oral Health Program for immigrant children was first implemented in 2011, Taiwan.

Method

- **Study design**
 - Randomized control trial
- **Study population**
 - Immigrant mothers and their children aged 2-6 years
- **Anticipate sample**
 - Each group needed 100 children

Method

- **LHA Selection and Recruitment**
 - Bilingual Vietnamese or Indonesian women who had lived in the selected urban communities for at least 1 year
 - Recruited from churches, schools, and immigrant service centers
- 50 LHAs were recruited and 37 completed the training course.

Evaluating the Effect of a Community-Based Lay Health Advisor Training Curriculum to Address Immigrant Children's Caries Disparities

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LHA Training

- Training manual and brochure development
- A 24-hr training session and 3-week practicum
- Caries prevention knowledge, oral hygiene demonstrations, teaching techniques, communication skills, and hands-on practice session



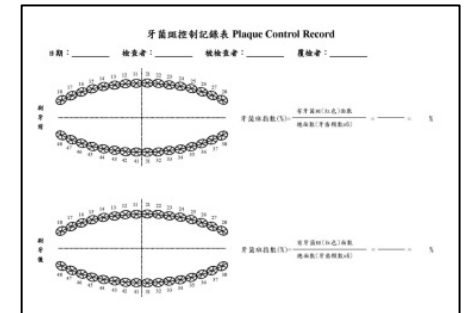
• Training manual



• Brochure



• Tooth brushing model



• Plaque control record



• Video camera (DVD)

LHA Trainees Oral Health Behaviors

Table 1. LHA pre- and post-training related to maternal oral health behaviors

Behaviors	Tooth-brushing 3 times	Tooth-brushing 3 minutes	Modified Bass method
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Training before	1.00	1.00	1.00
after	13.14 (4.34-39.75)	3.47 (1.32-9.08)	30.60 (3.79-247.29)
<hr style="border-top: 1px dashed black;"/>			
	Dental flossing	Fluoride toothpaste use	Child's dental visit
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Training before	1.00	1.00	1.00
after	4.56 (1.68-12.37)	5.63 (2.07-15.29)	3.57 (1.14-11.19)

Intervention

Randomized

Intervention group

Pre-test
• Questionnaire
• Oral exam

LHAs intervention
Home visit 4 times
Oral health education

1st Post-test
• Questionnaire

2nd Post-test
• Questionnaire
• Oral exams

Control group

Pre-test
• Questionnaire
• Oral exam

Brochure only

1st Post-test
• Questionnaire

2nd Post-test
• Questionnaire
• Oral exams

Time 1

4 wks

Time 2

6 mons

Time 3

Pre- and Post-test Survey

- Self-administered Questionnaire
 - Maternal knowledge, attitude, self-efficacy and child's behavior
 - Vietnamese version
 - Cronbach's α are among 0.72-0.84

Preliminary Results

Maternal knowledge, attitude, self-efficacy

Table 2. The **maternal caries-prevention** knowledge, self-efficacy, attitudes toward oral hygiene after LHA outreach

Characteristic	Intervention (n=29)				<i>P</i> ^a	Control (n=24)				<i>P</i> ^b
	Before		After			Before		After		
	mean	SD	mean	SD		mean	SD	mean	SD	
Knowledge (0-10)	5.86	2.22	8.48	2.06	<0.001	5.54	2.53	6.92	1.84	0.041
Self-efficacy (3-12)	9.24	1.72	9.07	1.51	1.000	9.54	1.53	10.29	1.76	0.039
Attitude (9-45)	38.24	4.38	38.03	4.03	1.000	37.70	4.89	39.42	4.06	0.359

P^a value is from Wilcoxon signed test and Wilcoxon signed rank test.

P^b value is from Wilcoxon rank sum test.

Child's Oral Hygiene Behaviors

Table 3. Child's oral hygiene behaviors movement in stage after outreach

Characteristic	Intervention		Control		OR (95%CI)	P
	N	%	N	%		
Brushing 3+ times daily	8	27.6	0	0.0	11.00 (1.37-88.64)	
Stage change						0.035
-1 (went back 1 stage)	1	3.5	1	4.2		
0 (stayed the same)	22	75.9	23	95.8		
1 (moved forward 1 stage)	6	20.7	0	0.0		
Brushing for 3 minutes	19	65.5	6	25.0	2.65 (1.08-6.50)	
Stage change						0.006
-1 (went back 1 stage)	0	0.0	1	4.2		
0 (stayed the same)	13	44.8	19	79.2		
1 (moved forward 1 stage)	16	55.2	4	16.7		

Conclusion

- The LHA strategy was effective in improving immigrant maternal knowledge and child's oral hygiene behaviors.
- Long-term effects of LHA intervention strategy on child's caries should be evaluated.

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