

Outcomes of a Breast Health Project for Hmong Women and Men in California

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Cancer is the leading cause of death for Asian American and Pacific Islander (AAPI) women in the United States, and breast cancer is the most common cancer site for this group.¹ Although breast cancer mortality rates have declined among all other racial/ethnic groups, rates are increasing among AAPI women.^{1,2} Low breast cancer screening rates contribute to this problem because AAPI women have the lowest screening rates among all ethnic groups.^{3–9} Analyses of the 2001 and 2003 California Health Interview Survey data showed that a significantly greater proportion of Asian American women (in aggregate; 17.2%) have never had a mammogram compared with White women (8.1%), and a smaller proportion of Asian American women (67%) received recent mammography compared with non-Hispanic White women (78%).^{8,10} Similar differences have been found among AAPI women in Los Angeles.⁷

However, Asian Americans and Pacific Islanders include more than 57 different AAPI groups, and the smaller populations—especially Southeast Asian populations such as the Hmong—are rarely surveyed. Hmong women are among those at highest risk for health problems and underutilization of screening services because of their high rates of poverty, low educational attainment (which makes understanding Western biomedical terminology difficult), lack of English fluency, and gender-defined role behavior.¹¹

Notably, however, stark cultural differences in health beliefs and practices create unique barriers that result in negative experiences with the Western medical system, resulting in a lack of trust and fear of Western medicine.^{12,13} For example, the Hmong cultural views are based in traditional animism, a belief that all elements of the earth and its creatures possess spirits or souls living in harmony.¹⁴ Each individual holds multiple souls, and disease is believed to be caused by the loss of 1 or more of these soul spirits; thus, illness is traditionally treated by a shaman who

restores balance between the living and the spiritual worlds.¹⁵ Hmong understanding of health has no equivalent biomedical “translation.” A clinical examination, and especially a Papanicolaou test, is seen as invasive and unseemly because shamans diagnose without undressing women. Such misunderstandings with clinicians may affect the use of preventive health services. Also, because mammograms and Papanicolaou tests were not available to most of these women in their home countries, older Hmong-American women may not understand the benefits.

Such social and cultural variations highlight the barriers faced by Hmong women to access and use of breast cancer screening services and underscore the need for culturally congruent approaches to increase cancer screening services through established strategies such as community-based outreach and lay health worker programs.^{16,17} These strategies have been shown to increase health literacy and

health-promoting behaviors in Asian American and other racial/ethnic populations.¹⁸

The Life Is Precious program is the first study in the United States designed to increase the receipt of breast cancer screening examinations among Hmong women. This 3-year community collaborative research project promoted breast self-examination, clinical breast examination, and mammography use among Hmong women in central and southern California. Researchers at 2 universities collaborated with 3 community-based organizations in separate Hmong communities to implement this breast health education project: Families in Good Health in Long Beach, Stone Soup in Fresno, and the Union of Pan Asian Communities in San Diego. We hypothesized that the community-based participatory research–designed intervention would significantly improve breast cancer screening knowledge, improve attitudes, and promote screening behaviors among Hmong women in the

Objectives. We used a community-based research approach to test a culturally based breast cancer screening program among low-income Hmong women in central and southern California.

Methods. We designed a culturally informed educational program with measures at baseline and 1-year follow-up in 2 intervention cities and 1 comparison city. Measures included changes in breast cancer screening, knowledge, and attitudes.

Results. Compared with women in the comparison community, women in the intervention community significantly improved their attitudes toward, and increased their knowledge and receipt of, breast cancer screenings. Odds of women in the intervention group having had a mammogram, having had a clinical breast examination, and having performed breast self-examination was 6.75, 12.16, and 20.06, respectively, compared with women in the comparison group.

Conclusions. Culturally informed education materials and intervention design were effective methods in conveying the importance of maintaining and monitoring proper breast health. The strength of community collaboration in survey development and intervention design highlighted the challenges of early detection and screening programs among newer immigrants, who face significant language and cultural barriers to care, and identified promising practices to overcome these health literacy challenges. (*Am J Public Health.* 2009;99:S467–S473. doi:10.2105/AJPH.2008.143974)

intervention group compared with women in the control group.¹⁹ The baseline data and methodology of the Life Is Precious program are described elsewhere.^{11,20}

METHODS

The Hmong are a preliterate population that has endured centuries of persecution in China and Southeast Asia. Because of their support of the US Central Intelligence Agency during the Vietnam War, the Hmong were targeted for genocide by the Laotian government. As a humanitarian effort, many were resettled in the United States beginning in the late 1970s into the mid-1980s.²¹ By 2000, 186 310 Hmong (defined as having Hmong ethnicity alone or in combination with 1 or more other races/ethnicities) lived in the United States, with nearly half (71 741) residing in California.²²

The refugee generation of Hmong have extremely low levels of literacy, in both their own language as well as in English; in California, the poverty rate among the Hmong is approximately 53%, and 84% live under 200% of the federal poverty line.²³ Health literacy among those older than 50 years²⁴ and educational attainment in both Laos and the United States are extremely low.¹¹ The Hmong's unfamiliarity with Western biomedical concepts, screening technology, and medicines constitute additional challenges to appropriate uses of prevention and early detection services.

Study Design

The Life Is Precious program used a quasi-experimental cohort design with 2 intervention cities (Fresno and San Diego) and 1 comparison city (Long Beach). The basis for this design was a needs assessment conducted from 1997 to 1999, which found very low levels of breast cancer screening knowledge among Hmong women in all 3 cities.¹¹ In Long Beach, however, preexisting educational efforts were already being conducted through a community agency. Thus, this agency agreed to be the comparison site and receive the Life Is Precious intervention after the evaluation phase of the 3-year study.

Beginning in August 2000, a baseline survey was conducted with Hmong women aged 40 years and older to determine knowledge, attitudes, and practices regarding breast cancer

screening behavior (breast self-examination, clinical breast examination, and mammography) in all 3 cities. That October, we instituted uniquely designed breast cancer education workshop programs in the 2 intervention cities, with a goal of enrolling 150 women and 150 men. Hmong men were specifically included in this outreach, because they were the main decision-makers in the Hmong family and community. Thus, their inclusion was an essential cultural component of our design. The 3- to 4-hour education sessions were conducted by trained Hmong health educators in a culturally acceptable location (i.e., temple or community-based site), and employed multiple Hmong-language educational materials (brochure, video, and flipchart) developed in conjunction with the community outreach staff and the advisory boards at all 3 sites.

Information collected through interviews with key community leaders and focus groups with the women themselves guided the design of the intervention. Most of the 552 women originally enrolled in the study had less than 2 years of formal education. Didactic learning was unfamiliar to them, but oral tradition (because traditional Hmong society is preliterate) and social learning by observation were the norm.

We began the sessions with Hmong games; culturally familiar foods were shared and used an informal conversational format in the education sessions. We developed a visually and linguistically appropriate graphical flipchart to talk about breast cancer screening and the emotional and logistic barriers to these services. A video developed for the intervention portrayed 2 Hmong women and their families discussing the importance of screening and the different steps of doing breast self-examination, getting a clinical breast examination, and getting a mammogram as they go through everyday life in the Hmong community. The video visually demonstrated the techniques used for each of the tests and walked the women through these procedures. A Hmong-language brochure was used to reinforce the information in both the flipchart and video for younger family members. Researchers and community partners included younger women in the education sessions because they knew that the younger women would have a greater understanding of the need for mammograms and would help to communicate this to the older women.

Pre- and postworkshop tests measured short-term changes in knowledge, attitude, and behavioral intentions. Questions were asked verbally and the women recorded their answers on color-coded pages with colored stickers, obviating reading and writing ability for the tests. The comparison community health outreach workers provided 1-on-1 and small-group workshops and used breast health education materials designed by mainstream organizations, as they had prior to the Life Is Precious program. A more complete description of the intervention methods, materials, community advisory boards, and short-term results among women and men were reported in a previous article.⁴ Beginning in September 2001, follow-up surveys were conducted with the same women who had completed the baseline survey to measure the longer-term changes in breast cancer knowledge, attitudes, and screenings. After all communities completed the follow-up surveys, the comparison community implemented the intervention.

Baseline and Follow-Up Measures

The baseline and follow-up surveys were designed to measure breast cancer screening knowledge, attitudes, beliefs, and behaviors (breast self-examination, clinical breast examination, and mammography). Demographic information included age, country of birth, years in the United States, number of years of education (in country of birth and the United States), speaking and reading language ability (in English and Hmong), marital status, medical insurance, and having a regular doctor. Fifteen knowledge variables included risk factors for breast cancer and recommended age for each screening. Seven attitude measures included reactions to prevention and treatment options. Behavioral measures included ever screened, when last screened, where, and for what reason. Many of the items used for these measures were adapted from the National Health Interview Survey cancer module (1993–1994) and the California Health Interview Survey 2001.^{25,26} The follow-up survey repeated the baseline questions, plus questions regarding exposure to the intervention components and effect of the inclusion of the Hmong men in their social networks.

The surveys were developed to be administered in a face-to-face format. They were

translated into Hmong by the health educators at one of our community-based organization partners (Families in Good Health, Long Beach, CA) and then reviewed by the bilingual health educators at the other 2 organizations (Union of Pan Asian Communities, San Diego, CA, and Stone Soup, Fresno). Discrepancies were discussed via teleconference among all staff and resolved by consensus. The follow-up survey consisted of the major questions from the baseline survey with additional questions regarding exposure to the intervention workshops and effect from the men in their social networks on receipt of screening. The surveys were pilot-tested with 5 women at each intervention site (n=15) to test for comprehension, length of administration, and logistics.

Participant Recruitment and Educational Program

As described elsewhere, a cohort of Hmong women aged 40 years and older was recruited by community health educators.⁴ The protocol for this recruitment required that the research team in each intervention community preidentify the neighborhood blocks or housing complexes with the highest concentrations of Hmong women aged 30 years and older and conduct door-to-door recruitment. Based upon power calculation of 0.80 for a .05 level of significance and 20% attrition based upon community reports of movement, a total of 150 women were needed from each intervention site to conduct planned statistical analyses. Therefore, we set our goal for 360 women from the intervention communities and 100 from the comparison community.

The team determined the sampling framework for recruitment (i.e., that every third apartment unit or house would be approached). The Community Advocates for Women's Health (CAWH; a group of Hmong and Lao community outreach workers employed by the previously mentioned community-based organizations) used the sampling framework to identify eligible housing units and to conduct recruitment. CAWH requested to speak with any woman resident aged 30 years or older. If no eligible woman lived there, CAWH selected the next available housing unit to approach and adjusted the sampling frame accordingly. If an eligible woman lived there, the CAWH used the contact script to

identify herself, the agency and university conducting the study, and the purpose of the study. Because we recruited for a cohort sample, incentives were offered for each segment: \$45 total, with \$10 for the first survey, \$25 for participation in the educational program, and another \$10 for the second survey.

After completing the script, CAWH asked each woman whether she was interested in participating. If the answer was "yes," CAWH showed the woman the 2-page program information sheet and verbally described each part of it. The CAWH worker then asked for either verbal (if the woman were illiterate) or written consent. Upon receiving consent, CAWH obtained demographic information, described the schedule of educational programs, and invited the woman to commit to attending the program at a specific date and time.

Any adult men who were members of the woman's family were invited to attend any of the scheduled educational programs for men. Only women recruited via the recruitment protocol were eligible to be a member of the cohort. Although the study age criterion was 40 years and older, women who were younger were not turned away from any sessions. The educational sessions were held at the local community-based organization site, someone's home, or other acceptable location where women could gather in a comfortable and trusted setting. These sessions were led by 1 or 2 female Hmong community health educators; information on breast cancer screening was conveyed via culturally based flipchart, brochure, and video. Men and women attended in separate groups. There were no apparent differences in the outcomes of the educational sessions by gender. (Please see Tanjasiri et al.⁴ for a more in-depth description of each of these educational materials.)

Data Management and Analysis

We entered all survey data into an SAS database, versions 8 and 9 (SAS Institute Inc, Cary, NC) for analyses. Univariate analyses included frequencies of all variables; we used bivariate analyses to examine whether significant differences existed between groups (intervention vs comparison) by using the χ^2 test (for categorical data) and *t* test (for continuous variables). We used multivariate logistic regression to determine whether a significantly positive

change in screening behavior (breast self-examination, clinical breast examination, and mammography) occurred in the intervention group compared with the comparison group. Positive change in screening behavior between baseline and follow-up was defined as either (1) having never had a screening examination at baseline but having appropriately performed breast self-examination or received a breast screening (clinical breast examination or mammogram) at follow-up, or (2) having appropriately performed breast self-examination or received a breast screening at baseline and continuing to do this at follow-up.

A total of 552 Hmong women participated in the baseline survey, of whom 434 (354 women in the intervention group and 80 in the comparison group) of the original cohort participated in the follow-up survey. The final retention rate was 78.6%, with loss to follow-up because of women who either declined to participate or moved out of the area or state and could not be located. Because of the downturn of the California economy in the late 1990s and the change in welfare laws that stipulated time limits on the receipt of public support, many Hmong families left San Diego and Long Beach to seek jobs in other localities, often out of state. Fortunately, we accounted for a 20% loss to follow-up in our original calculations to maintain the final sample sizes needed, per the power analysis.

RESULTS

As shown in Table 1, there were significant differences between participants in the intervention and comparison communities regarding age, marital status, ability to read Hmong and speak English, and health insurance status. Women in both intervention and control groups were generally aged between 40 and 49 years, had less than 1 year of formal education in either the United States or their country of birth, were married, were on Medi-Cal (California's Medicaid), and had a regular doctor. However, proportionally more women in the intervention group were aged older than 50 years (51.3% in the intervention group vs 29.2% in the comparison group), more were widowed (20.4% vs 10.0%, respectively), fewer were unable to read Hmong (13.1% vs 46.3%, respectively) or read or speak English

TABLE 1—Demographic Characteristics of Hmong Women (N=434) Participating in a Culturally Informed Breast Cancer Screening Education Program: Central and Southern California, 1999–2001

	Comparison Group, No. (%)	Intervention Group, No. (%)	Total, No. (%)	<i>P</i> ^a
Age distribution, y				<.001
< 39	26 (32.9)	28 (8.3)	54 (13.0)	
40–49	30 (38.0)	136 (40.4)	166 (39.9)	
50–59	10 (12.7)	78 (23.1)	88 (21.2)	
> 60	13 (16.5)	95 (28.2)	108 (26.0)	
Education in United States				.16
< 1 y	46 (63.9)	255 (74.8)	301 (72.9)	
1–5 y	20 (27.8)	68 (19.9)	88 (21.3)	
> 5 y	6 (8.3)	18 (5.3)	24 (5.8)	
Education in country of birth				.08
< 1 y	67 (91.8)	332 (96.8)	399 (95.9)	
1–5 y	2 (2.7)	6 (1.7)	8 (1.9)	
> 5 y	4 (5.5)	5 (1.5)	9 (2.2)	
Marital status				.03
Single	1 (1.3)	0 (0.0)	1 (0.2)	
Married	68 (85.0)	260 (75.8)	328 (77.5)	
Divorced	3 (3.8)	13 (3.8)	16 (3.8)	
Widowed	8 (10.0)	70 (20.4)	78 (18.4)	
Years in United States				.12
1–5	2 (2.5)	6 (1.8)	8 (2.0)	
6–10	11 (13.8)	69 (21.0)	80 (19.6)	
11–15	23 (28.8)	113 (34.3)	136 (33.3)	
16–20	21 (26.3)	86 (26.1)	107 (26.2)	
21–25	23 (28.8)	55 (16.7)	78 (19.1)	
Regular doctor				.57
Yes	78 (97.5)	329 (96.2)	417 (96.4)	
No	2 (2.5)	13 (3.8)	15 (3.6)	
Language ^b				
Read Hmong	37 (46.3)	38 (13.1)	75 (20.3)	<.001
Speak English	10 (12.5)	19 (6.3)	29 (7.6)	.06
Read English	4 (5.0)	17 (6.0)	21 (5.8)	.72
Medical insurance ^b				
Have insurance ^c	26 (32.5)	34 (9.8)	60 (14.1)	<.001
Have Medi-Cal	61 (76.3)	310 (83.6)	371 (87.1)	<.001
No insurance	0 (0.0)	6 (1.7)	6 (1.4)	.24

Note. For the comparison group, n=80; for the intervention group, n=354.

^aPearson χ^2 test (2 sided).

^bResponses do not equal 100%; results reflect “yes” response only.

^cPrivate insurance or Medicare.

(6.3% vs 12.5%, respectively), and fewer had private insurance or Medicare (9.8% vs 32.5%, respectively), and more were on Medi-Cal (83.6% compared with 76.3%). Approximately 69% of the Hmong in the intervention group resided in Fresno County and, within

this group, 55% of adults lived below the federal poverty level and 50% received public assistance.¹⁴

Screening knowledge and attitudes about breast cancer showed significant changes between baseline and follow-up (Table 2), but in

unexpected patterns. In the comparison community, knowledge increased from a baseline mean of 3.8 correct answers to a follow-up mean of 4.0 correct answers ($P=.54$). In the intervention communities, knowledge increased from a baseline mean of 3.8 to 7.5 at follow-up ($P<.001$). Change in attitude, however, showed inverse results for the comparison community, with means of 4.4 correct answers at baseline to 3.4 correct answers at follow-up ($P<.001$). The intervention community had a positive change in score from 4.0 to 4.7 correct answers ($P<.001$).

Breast cancer screening rates showed significant increases between baseline and follow-up in the intervention group in all 3 modalities: ever having heard about breast cancer screening methods (breast self-examination, clinical breast examination, or mammograms), ever having done breast self-examination, and ever having had a clinical breast examination and mammogram (Table 3). Interestingly, no significant increases in screening intention were found in the intervention group, yet intention to do breast self-examination in the comparison group significantly increased. In the comparison group, significant increases were found for ever having heard of breast self-examination, and ever having had a clinical breast examination.

Lastly, we used a logistic regression model to test the effect of group (intervention vs comparison), and we controlled for significant demographic variable differences. As shown in Table 4, after we controlled for years in the United States, age, marital status, language, years of education, and health insurance status and participation in the intervention group significantly predicted increases in all 3 breast cancer screenings. The women in the intervention group were 6.75 times more likely to have had a mammogram, 12.16 times more likely to have had a clinical breast examination, and 20.06 times more likely to have performed breast self-examination compared with women in the comparison group.

DISCUSSION

The Life Is Precious program was the first intervention project initiated by the Hmong community and focused specifically on breast health education. It confirms the unique and

TABLE 2—Change in Knowledge and Attitude Measures of Hmong Women Participating in a Culturally Informed Breast Cancer Screening Education Program: Central and Southern California, 1999–2001

	Comparison Group			Intervention Group		
	Baseline, Mean (SD)	Follow-Up, Mean (SD)	<i>P</i> ^a	Baseline, Mean (SD)	Follow-Up, Mean (SD)	<i>P</i> ^a
Knowledge measures ^b	3.81 (0.28)	4.01 (0.23)	.544	3.78 (0.13)	7.48 (0.23)	<.001
Attitude measures ^c	4.44 (0.15)	3.43 (0.16)	<.001	4.00 (0.08)	4.76 (0.06)	<.001

Note. For the comparison group, n=80; for the intervention group, n=354.

^aSignificance test using means procedure.

^bNumber of correct answers on a measure of 1 to 15.

^cNumber of correct answers on a measure of 1 to 7.

TABLE 3—Breast Cancer Knowledge, Attitudes, and Screening Behaviors of Hmong Women Participating in a Culturally Informed Breast Cancer Screening Education Program (N=434): Central and Southern California, 1999–2001

	Comparison Group		Intervention Group	
	Baseline, No. (%)	Follow-Up, No. (%)	Baseline, No. (%)	Follow-Up, No. (%)
Yes, ever heard of				
Breast self-examination	50 (62.5)	63 (79.6)**	245 (71.9)	330 (93.5)***
Clinical breast examination	52 (65.0)	61 (76.3)	226 (65.3)	315 (89.5)***
Mammogram	47 (58.6)	56 (70.0)	182 (52.0)	285 (81.0)***
Yes, ever had				
Breast self-examination	20 (25.3)	29 (36.7)	125 (36.2)	207 (59.8)***
Clinical breast examination	59 (73.6)	28 (35.0)***	140 (40.0)	197 (56.3)***
Mammogram	19 (23.8)	19 (23.8)	103 (29.4)	143 (40.9)***

Note. For the comparison group, n=80; for the intervention group, n=354.

P*≤.01; *P*≤.001 (paired *t* tests).

significant barriers to prevention and early detection faced by the Hmong communities in California. Few participating women had more than 1 year of formal education in the United States or in their country of origin; they possessed low English and Hmong reading literacy, and most had public insurance (i.e., Medicaid).

Our study also confirmed the effectiveness of the culturally and linguistically based intervention in increasing breast cancer screening among Hmong women. The intervention was uniquely designed to educate both Hmong women and men about breast health and screening exams through the use of culturally specific education materials and to increase examinations among Hmong women.⁴ At baseline, all the women had very low rates of all

modalities of breast cancer screening: in the intervention group, 36.2% did breast self-examination, 40.0% had had a clinical breast examination, and 29.4% had had a mammogram, whereas in the control group the proportions were 25.3%, 73.6%, and 23.8%, respectively. Women in the intervention group significantly increased their rates of breast cancer screenings as a result of the intervention.

Screening knowledge and attitude increased and improved between baseline and follow-up in both the comparison and intervention communities. Inverse results in attitude measures for the comparison community, however, may be attributable to administration of the survey. Different CAWHs administered the surveys in the comparison community at baseline and

follow-up. It is possible that participants may not have clearly understood what was being asked at baseline; questions may have been better defined at follow-up.

Despite our highly significant intervention findings, several biases in the study may limit the validity or generalizability to other Hmong communities or other “hard-to-reach” minority populations. First, the small total Hmong population size in the United States placed a limitation on sampling. We had to include whomever we could reach who was willing to participate in the experiment. This limits the representativeness of the sample.

Second, it is clear from baseline data that women in the intervention and comparison groups differed significantly on many demographic characteristics. For instance, women in the intervention group were more likely to be recent immigrants and to have obtained their education in a foreign country than women in the comparison group and, thus, were possibly less familiar with breast health and regular breast cancer screening. The demographic differences of the groups, however, potentially underestimate the study’s intervention effects, because these demographic differences suggest that the intervention communities faced greater barriers to care than the comparison community. Thus, the magnitude of the intervention impact lends further strength to the power of the intervention to increase knowledge about, promote more positive attitudes toward, and create a higher likelihood of screening behavior compared with the women in the comparison group.

Last, all data were self-reported and, thus, despite the quasiexperimental design, social desirability biases may have influenced our findings. We attempted to obtain screening vouchers at mammography sites, but this was not feasible because women forgot to turn in their vouchers at the time of the mammogram.

Despite these study limitations, we believe that addressing literacy issues within limited-English-speaking Hmong and using innovative educational and assessment strategies appropriate to their literacy levels and congruent with their culturally familiar modes of learning new information were key elements to the effectiveness of this intervention design. For

TABLE 4—Effect of Culturally Informed Educational Intervention on Breast Cancer Screenings Among Hmong Women: Central and Southern California, 1999–2001

Control Variables	Breast Self-Examination, OR (95% CI)	Clinical Breast Examination, OR (95% CI)	Mammogram, OR (95% CI)
Years in United States: ≥10 vs <10	0.21 (0.02, 2.08)	0.57 (0.10, 3.16)	0.26 (0.04, 4.46)
Age, y			
0–39	...	0.30 (0.01, 6.94)	...
40–49	1.28 (0.28, 5.83) ^a	0.79 (0.17, 3.71)	1.02 (0.31, 3.34)
50–59	2.85 (0.54, 15.04)	1.48 (0.278, 7.91)	1.78 (0.46, 6.90)
Marital status			
Single or widowed	7.63 (0.26, 227.31)	4.28 (0.18, 102.58)	1.98 (0.13, 31.46)
Married	1.80 (0.12, 27.14)	1.34 (0.11, 16.24)	1.78 (0.15, 21.54)
Language			
Read Hmong	1.10 (0.65, 1.86)	1.05 (0.63, 1.77)	1.36 (0.82, 2.25)
Speak English	0.55 (0.22, 1.39)	0.89 (0.35, 2.26)	1.07 (0.46, 2.49)
Read English	1.27 (0.43, 3.71)	0.70 (0.23, 2.16)	0.45 (0.15, 1.31)
Education in United States			
No schooling	4.32 (1.05, 17.71)*	2.73 (0.63, 11.89)	1.00 (0.23, 4.33)
<2 y	3.30 (0.68, 15.91)	2.07 (0.44, 9.82)	0.56 (0.12, 2.66)
Education in country of birth			
No schooling	3.24 (0.31, 33.75)	0.79 (0.06, 10.84)	2.93 (0.53, 16.13)
<2 y	1.98 (0.10, 40.25)	0.81 (0.03, 20.94)	...
Medical insurance			
Private or Medicare	1.83 (0.29, 11.72)	5.05 (0.46, 55.89)	1.64 (0.25, 10.91)
Group	20.06 (3.08, 130.79)***	12.16 (1.44, 102.74)*	6.75 (1.55, 29.39)**

Notes. OR=odds ratio; CI=Wald confidence limits.

^aAge range is 0 to 49 years.

* $P \leq .05$; ** $P \leq .01$; *** $P \leq .001$.

example, this study is one of the first breast cancer screening promotion studies to include men in the outreach and education efforts and materials.¹¹ The comparison community conducted outreach only to the women in a more traditional breast cancer outreach and education in-language format with essentially no change in screening behavior.^{27,28}

Replication of this format in a larger sample of Asian Americans or other ethnic groups may help determine the contribution of the inclusion of men in the outreach efforts for breast cancer screening promotion. Including men and using video in the sessions were the major differences in the design compared with the outreach and education that had been provided in the comparison community for about 2 years prior to the initiation of the intervention; these appear to be key to promoting breast screening behaviors in this underserved population. The study also demonstrated the ability of the community to

successfully collaborate with traditional researchers to serve the needs of medically underserved populations. ■

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This article was accepted November 6, 2008.

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Acknowledgments

This project was supported by a grant from the California Breast Cancer Research Program (grant 5BB-1501).

We thank all the community partners who were essential to the planning, implementation, and evaluation of this study: Union of Pan Asian Communities (San Diego), Families in Good Health/St Mary's Medical Center (Long Beach), and Stone Soup (Fresno), and Anh Tran and Thy Nguyen, who initially staffed the project as graduate students. We also thank the Hmong men and women who participated in the survey and educational program.

Human Participant Protection

This study was approved by the University of California, Los Angeles.

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