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Cervical Cancer Screening Among Thai Women in Northern California

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ABSTRACT

Objectives: **Cervical cancer is the leading cause of cancer for Thai women in Thailand, but little is known about the cancer screening practices of Thai immigrants in the United States. This study explores factors that influence cervical cancer screening behavior among Thai women in California.**

Methods: **In 2003, face-to-face interviews were conducted in Northern California among Thai women age ≥ 18 years. Surveys collected information on use and adherence to Pap tests, demographic characteristics, access to healthcare variables, enabling factors, and knowledge of and attitude toward cervical cancer and screening.**

Results: **Among the 322 women included in the study, 74% were ever screened and 61% were screened within the last 3 years (adherent) for cervical cancer. Having a doctor's recommendation was significantly associated with ever having and recently having a Pap test. Insurance status, language most used, and selected knowledge and enabling variables were also predictors of Pap screening.**

Conclusions: **The Pap testing rates for Thai women in our sample were lower than national guidelines. Interventions should be targeted toward improving access to screening (especially for first-time screeners), enhancing culturally appropriate patient-physician interactions to promote screening, deemphasizing sexual activity, and increasing knowledge about cervical cancer causes for Thai women in the United States.**

INTRODUCTION

CERVICAL CANCER IS ONE of the most preventable cancers in the United States, with the Pap test shown to be effective in detecting not only cancerous but also precancerous cells that can be removed. Unfortunately, the Pap test is severely underused among many ethnic and racial populations in this country. Cervical cancer is the leading or second leading form of cancer among women in all major cities of Thailand (considered part of Southeast Asia), with an age adjusted incidence rate (28.6 per 100,000) that is among the highest in the world.[1–3] In the United States, incidence rates among Southeast Asian women (35.2 per 100,000) are four times higher than rates of white women (8.3 per 100,000).[4] Despite the existence of a screening examination (Pap testing) that can prevent and detect early cervical cancer, what little that is known about Asian American and Pacific Islander (AAPI) women points to markedly lower screening rates; alarmingly,

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nothing is known about the rates for Thai American women.[5–7] According to the 2000 National Health Interview Survey, only 71% of AAPI women age ≥25 years have received a Pap test within the last 3 years compared with the national screening rate of 82%.[8] In California, AAPI subgroups continue to report lower rates of recent screening (72%) than African Americans (91%) and Hispanics (86%) despite higher income and education levels.[5] Previously identified barriers to screening for AAPI women include sociodemographics, access to healthcare, negative screening knowledge and attitudes, and fatalistic religious beliefs.[9–15] Studies of Thai women in Thailand and Australia have also identified many misperceptions regarding the cause of cervical cancer, including poor hygiene, abnormality of one's uterus, and poor karma.[16,17]

The 2000 U.S. Thai population was over 160,000, a 65% increase from a decade ago, with almost 47,000 residing in California.[18] The total Thai population may be much larger as Thais have the second highest percentage of foreign-born noncitizens living in the United States. Unlike their Southeast Asian counterparts (from Vietnam, Laos, and Cambodia), close to 40% of Thai Americans immigrated to the United States prior to 1980.[19] Despite the growing population size, there have been no published studies on cervical cancer screening among Thai American women. This study examines the cervical cancer screening rates of Thai women in Northern California and identifies specific factors contributing to baseline and regular screening.

MATERIALS AND METHODS

Participants

Study participants were part of the Promoting Access to Health for Southeast Asian and Pacific Islander Women (PATH for Women) Project a 5-year Racial and Ethnic Approaches to Community Health 2010 effort funded by the Centers for Disease Control and Prevention (CDC) Foundation through the generosity of The California Endowment. PATH for Women aimed to increase breast and cervical cancer screening rates for seven underrepresented AAPI groups in Los Angeles and Orange Counties and was a collaborative community-based participatory research project consisting of partnerships between community-based organizations and academic researchers. Women from the seven AAPI communities in Southern California were selected and interviewed both prior to (baseline survey) and after (follow-up survey) the implementation of breast and cervical cancer screening and awareness interventions. For the purposes of a control group, the same seven underrepresented AAPI groups were selected in Northern California and interviewed with the same baseline and follow-up survey instruments. Interventions to promote breast and cervical cancer screening and awareness were implemented for the Northern California groups after study completion.[20] This study reports on results from the baseline survey on cervical cancer screening of the Thai population in Northern California.

Sampling methodology

A nonprobability sample of Thai women age ≥18 years in Northern California was recruited between January and March 2003 by staff at four community-based organizations to complete face-to-face interviews containing a total of 93 closed-ended questions. Identification and recruitment of Thai women were based on specific sampling plans to target the most underserved women of the community in order to best develop future interventions. Women from the Thai community were recruited by age (18+ years), income (ranging from low to high as perceived by the interviewers only), language ability (speaks English only, speaks both English and other language(s), speaks only other language), and religion (Buddhist or Christian) through religious venues and community-based organizations.

Questionnaire

Survey content was based on questions from the California Health Interview Survey and the Cancer Control Supplement to the National Health Interview Survey.[21,22] The survey instrument was developed in English, translated into Thai by trained, bilingual community health workers, and then reviewed by community leaders for accuracy in wording and meaning. Trained interviewers from community-based organizations administered the survey in Thai or English to women who agreed to participate. More details on survey development, translation, and sampling strategies are provided in previous publications.[23,24]

Measures

The questionnaire consisted of (1) demographic variables, (2) healthcare access indicators, (3) enabling factors, and (4) knowledge and attitude questions related to cervical cancer and screening. In addition to the general demographic and healthcare access factors included in this study (listed in tables), proportion of life spent in the United States was constructed with the ratio of years in the United States to age and later dichotomized to ≤25% or >25% as used in previous literature focusing on immigrant populations.[25] Highest level of education was obtained from selecting the highest number of years reported for education in the United States or in another country. Seven enabling risk factors (listed in tables) were identified from answers to the question "What would make it more likely for you to get a Pap test in the future?" Nine knowledge questions and two attitude questions were administered from statements about cervical cancer causes, prevention, treatment, and disclosure, which had answer choices of "agree" or "disagree." Scientifically supported knowledge and attitude items for cervical cancer were adapted from the Cancer Control Supplement to the National Health Interview Survey.[22]

Ever been screened and recently screened were assessed from two separate self-reported questions. Women who ever had a Pap test were compared with those who never had a Pap test. Recent screening was assessed by comparing women who had a Pap test within the last 3 years with women who had not. Women who had a Pap test within the last 3 years were considered to be adherent to national cervical cancer screening guidelines according to the U.S. Preventive Services Task Force.[26,27] Those who answered "don't know/not sure" to any of the screening questions were excluded from the analyses.

Statistical analyses

Descriptive analyses for independent risk factors were conducted, with continuous variables converted to categorical levels based on distributions in the data as well as previous literature. Logistic regression was used to test the relationship between independent risk factors and ever or recent screening. Significant variables at the $p < 0.05$ level were included in multivariate logistic regression analyses. For analysis of ever screened women, employment, language, doctor's recommendation, family/friend's recommendation, transportation, cost, assistance with appointment, having a female physician, and the knowledge question "Only women who are sexually active should get Pap smears" were included in the age-adjusted multivariate model. For analysis of women screened within the last 3 years, language, doctor's recommendation, cost, assistance with appointment, and the knowledge question "Only women who are sexually active should get Pap smears" were included in the age-adjusted multivariate model. Variables with a significance level of $p < 0.05$ in the multivariate models were considered to be associated with screening outcome. All statistical analyses were conducted using SAS (v. 9.0, Cary, NC).

RESULTS

Response rates and sample characteristics

A total of 360 Thai women from Northern California completed the survey. There was a 100% response rate of women who were approached to complete the survey, most likely because of the relationship between community-based organizations implementing the survey and women in the Thai community. The demographic characteristics of the sample population are presented in Table 1. Close to two thirds of the sample were under the age of 50. Although all women were foreign born (the majority in Thailand), close to 70% of the women reported that they spoke English or a combination of both English and Thai. Less than half (43.3%) have spent < 25% of their lifetime in the United States. About two thirds of the women had health insurance (private, Medicaid, Medicare, or other), although a lower percentage reported having a regular doctor, and only 7% had doctors who spoke Thai.

Baseline cervical cancer screening

Among the 360 women in the sample, 38 were excluded from the analysis because they answered "don't know" or "not sure" to the cervical cancer screening questions. Close to three fourths (74.5%) of the remaining 322 women ever had a Pap test. Language most used and employment status were significantly associated with ever having had a Pap test (Table 2). Speak-

Table 1. Demographic Characteristics and Healthcare Access of Thai Survey Participants

	n	%
Age, years		
18–39	105	29.6
40–49	130	36.7
50–59	78	22.0
60+	41	11.6
Birthplace		
United States	0	0.0
Laos	7	1.9
Thailand	352	98.1
Percent of life in United States		
≤25%	153	43.3
<25%	200	56.7
Marital status		
Single/divorced/widowed	123	34.3
Married/living as married	236	65.7
Language used		
Only/mostly English/both	250	69.8
Only/mostly Thai	108	30.2
Highest education Level		
<High school	90	26.2
High school, vocational, ESL	144	48.2
Some college or more	110	25.6
Language used by doctor		
Thai	18	7.35
Not Thai	227	92.7
Currently employed	264	73.7
Regular medical doctor	219	62.1
Health insurance	237	67.7

ing mostly or only Thai was negatively associated with ever having had a Pap test, with only about one fourth (24.7%) of women who have ever had a Pap test speaking mostly or only Thai. No healthcare access factors were associated with baseline screening.

As shown in Table 3, all enabling factors were positively associated with ever having had a Pap test. About 84.8% of women who have ever had a Pap test said that a doctor's recommendation would make it more likely for them to have a Pap test in the future. Although the average knowledge score was 7.29 of 9 questions and the average attitude score was 1.64 of 2 questions among women who have ever had a Pap test (data not shown), the only statistically significant knowledge or attitude statement was "Only women who are sexually active should get Pap smears."

Significant variables from bivariate analysis for ever having a Pap test as well as age were included in the multivariate model (Table 4). Current employment, language used, doctor's recommendation, and belief that "Only women who are sexually active should get Pap smears" were significantly associated with Pap testing in the multivariate analysis. Although women were asked a series of questions about their knowledge of cervical cancer risk factors (including onset of sex at an early age, having many sex partners, and smoking), none were significantly associated with Pap testing except for the belief that "Only women who are sexually active should get Pap smears." Women who were employed were 2.2 times more likely to ever have had a Pap test compared with women who were not employed. Women who used only or mostly English or both English and Thai equally were 1.8 times more likely to have ever had a Pap test. Respondents who disagreed with the statement that "Only women who are sexually active should get Pap smears" were three times more likely to have ever had a Pap test. Finally, women who agreed that a having doctor's recommendation would make it more likely for them to get a Pap test in the future were seven times more likely to have ever had a Pap test compared with women who disagreed.

Table 2. Unadjusted Odds Ratio for Pap Testing by Demographic and Healthcare Access Factors

	Ever had a Pap smear			*Pap smear within 3 years*		
	n *(%)*	*OR*	*(95% CI)*	n *(%)*	*OR*	*(95% CI)*
All women	240 (74.5)			198 (61.5)		
Age, years						
18–39	105 (29.2)	1.00		58 (28.4)	1.00	
40–59	208 (57.8)	1.40	(0.76-2.42)	117 (60.4)	0.92	(0.58-1.45)
60+	41 (11.9)	1.29	(0.54-3.08)	22 (11.2)	1.02	(0.50-2.08)
Years in United States						
≤10	105 (43.8)	1.00		88 (44.9)	1.00	
>10	135 (56.3)	1.05	(0.64-1.75)	108 (55.1)	0.87	(0.57-1.32)
Percent of life in United States						
≤25%	103 (43.6)	1.00		89 (44.7)	1.00	
>25%	133 (56.4)	1.11	(0.87-1.85)	110 (55.3)	0.88	(0.58-1.34)
Marital status						
Single/divorced/widowed	76 (31.8)	1.00		65 (32.8)	1.00	
Married/living as married	163 (68.2)	1.37	(0.82-2.31)	133 (67.2)	1.15	(0.74-1.78)
Language used						
Only/mostly English/both	180 (75.3)	1.00		149 (75.3)	1.00	
Only/mostly Thai	59 (24.7)	0.50*	(0.29-0.85)	49 (24.8)	0.56*	(0.36-0.88)
Highest education level						
<High school	62 (27.3)	1.00		50 (26.6)	1.00	
High school, vocational, ESL	91 (40.1)	1.27	(0.69-2.36)	75 (39.9)	1.25	(0.75-2.07)
College	74 (32.6)	1.20	(0.62-2.30)	63 (33.5)	1.01	(0.59-1.73)
Currently employed						
No	57 (23.9)	1.0		48 (24.4)		
Yes	181 (76.1)	1.83*	(1.04-3.14)	149 (75.6)	1.24	(0.77-1.99)
Regular medical doctor						
No	87 (37.2)	1.00		73 (37.4)	1.00	
Yes	148 (63.0)	1.18	(0.69-2.00)	122 (62.5)	1.05	(0.68-1.62)
Language used by doctor						
Not Thai	148 (93.7)	1.00		120 (92.3)	1.00	
Thai	10 (6.33)	0.55	(0.199-1.51)	10 (7.69)	1.11	(0.42-2.93)
Health insurance						
No	70 (30.0)	1.00		56 (29.2)	1.00	
Yes	163 (70.0)	1.18	(0.69-2.04)	136 (70.1)	1.37	(0.87-2.15)

*Significant $p < 0.05$.

Adherence to cervical cancer screening

About 61.5% of women have had a Pap test within the last 3 years. The risk factors associated with having a recent screening were similar to the risk factors associated with ever being screened (Tables 2 and 3). However, language used was the only demographic factor associated with recent screening. Among enabling factors, doctor's recommendation, help with an appointment, and low or no cost of Pap testing were significantly associated with recent screening. Again, among the 12 knowledge and attitude variables the only significant knowledge variable was disagreement with the statement that "Only women who are sexually active should get Pap smears."

As shown in Table 4, having a doctor's recommendation and disagreement with the statement that "Only women who are sexually active should get Pap smears" were associated with adherence to screening in the multivariate analysis. Respondents who disagreed that "Only women who are sexually active should get Pap smears" were almost three times more likely to be screened within the last 3 years than women who agreed. Women who agreed that having a doctor's recommendation would increase their likelihood of having a future Pap test were three times more likely to have had a Pap test within the last 3 years compared with women who did not agree.

DISCUSSION

The results of this study indicate that the immigrant Thai women in this sample have

Table 3. Unadjusted Odds Ratios for Pap Testing by Enabling and Select Knowledge Factors

	Ever had a Pap smear			*Pap smear within 3 years*		
	n *(%)*	*OR*	*(95% CI)*	n *(%)*	*OR*	*(95% CI)*
All women	240 (74.5)			198 (61.5)		
Enabling factor						
Doctor recommendation						
No	36 (15.3)	1.00		32 (16.2)	1.00	
Yes	200 (84.8)	7.02*	(1.65-29.9)	165 (83.7)	3.24*	(1.38-7.59)
Friend/family recommendation						
No	145 (61.4)	1.00		123 (38.3)	1.00	
Yes	91 (38.6)	2.71*	(1.46-5.05)	74 (37.6)	1.59	(0.97-2.59)
Available transportation						
No	145 (61.4)	1.00		124 (62.9)	1.00	
Yes	91 (35.6)	2.58*	(1.95-3.4)	73 (37.1)	1.55	(0.95-2.54)
Help with appointment						
No	145 (61.4)	1.00		123 (62.4)	1.00	
Yes	91 (38.6)	2.95*	(1.57-5.57)	74 (37.6)	1.65*	(1.02-2.71)
Low/no cost						
No	124 (52.5)	1.00		104 (52.8)	1.00	
Yes	112 (47.5)	2.89*	(1.63-5.15)	93 (47.2)	1.75*	(1.10-2.78)
Friend/family went with you						
No	157 (66.5)	1.00		134 (68.2)	1.00	
Yes	79 (33.5)	2.59*	(1.35-4.98)	63 (31.8)	1.47	(0.89-2.44)
Female/doctor or nurse						
No	142 (60.2)	1.00		121 (61.4)	1.00	
Yes	94 (39.8)	2.86*	(1.54-5.32)	76 (38.6)	1.60	(0.98-2.59)
Knowledge factors						
Only women who are sexually active should get Pap smears						
No	194 (87.8)	4.27*	(2.2-8.30)	163 (89.1)	3.32*	(1.76-6.23)
Yes	27 (12.2)	1.00		20 (11.0)	1.00	

*Significant at $p < 0.05$.

lower cervical cancer screening rates than the overall national average (92% ever screened, 82% screened within past 3 years), the screening rates for Asians in California (77% ever screened, 72% screened within past 3 years), and the target goals for Healthy People 2010 (97% women aged ≥18 ever screened, 90% women aged ≥18 screened within the past 3 years).[5,28] These results were also lower than national rates for recent screenings among other Asian subgroups (such as 70% of Korean and 74% of Filipino women),[6] pointing to the need to collect and analyze disaggregated data for AAPI ethnic populations. However, the ever screened rate in our Thai population was higher than reported rates for other Southeast Asian groups, such as Vietnamese women in California (53% ever screened),[11] indicating potential cultural, immigration, or community differences between Thai women and women from other groups that may affect access to and use of preventive services.

Some knowledge and attitudes toward Pap testing and cervical cancer were significant to screening use. Agreeing with the statement "Having a physician's recommendation would increase their chance of getting a Pap test in the future" had the strongest association with ever having a Pap test and having a recent Pap test. Women who agreed that a physician's recommendation would increase their likelihood for future screening were about seven times more likely to have ever had a Pap test and about four times more likely to adhere to regular Pap testing compared with women who did not agree. Previous studies in different AAPI populations as well as other minority and low-income groups

Table 4. Age-Adjusted Multivariate Analysis for Cervical Cancer Screening and Screening Adherence among Women Aged ≥18 Years

	Ever had a Pap smear		*Pap smear within 3 years*	
	OR	*(95% CI)*	*OR*	*(95% CI)*
Currently employed				
No	1.00			
Yes	2.26*	(1.11-4.59)		
Language used				
Only/mostly Thai	1.00		1.00	
Only/mostly english/both	2.45*	(1.19-5.04)	1.43	(0.90-2.28)
Doctor recommendation				
No	1.00		1.00	
Yes	7.77*	(1.71-35.2)	4.35*	(1.55-12.2)
Friend/family recommendation				
No	1.00			
Yes	2.09	(0.30-14.2)		
Available transportation				
No	1.00			
Yes	2.54	(0.51-12.6)		
Help with appointment				
No	1.00		1.00	
Yes	0.50	(0.07-3.43)	1.36	(0.65-3.43)
Low/no cost				
No	1.00		1.00	
Yes	1.31	(0.38-4.52)	1.30	(0.53-2.66)
Friend/family went with you				
No	1.00			
Yes	0.80	(0.23-2.74)		
Female doctor or nurse				
No	1.00			
Yes	1.56	(0.58-4.22)		
Only women who are sexually active should get Pap smears*				
No	3.02*	(1.38-6.59)	2.98*	(1.49-5.94)
Yes	1.00		1.00	

*Significant at $p < 0.05$.

have shown that physician-patient relationships are significant predictors of screening behavior.[9,13,14,20,29] Within Southeast Asian communities, cultural norms may hold the role of physicians with high regard and authority, thus having significant effect when a recommendation is made for a Pap test, particularly if the provider is female.[13]

In addition, the belief that "Only women who are sexually active should get Pap smears" was also strongly associated with screening. Although a range of knowledge and attitude questions was asked of respondents, only this belief was significantly associated with Pap testing. Modesty and taboo around discussing sexual health may serve as a barrier for women to ask for a Pap test or understand the need for a Pap test if they are not sexually active. Younger women in the community may be afraid to ask for a Pap test because of cultural implications of a pelvic examination, and older women who are no longer sexually active may consider Pap examinations unnecessary. Anecdotally, advocates in the Thai community have also told us that many women (younger and older) are in the United States illegally, which also presents unique barriers to healthcare services. Thai women from both age groups should be targeted for community-based, culturally specific, in-language health promotion programs supporting regular cervical cancer screening to maintain health.

Limitations of this study included sampling, which relied on the recruitment of women who were linked to the community-based organizations involved in the study. The sampling framework recruited women in specific income, age,

and religious distributions representative of the Thai community rather than national distributions of income and age. For instance, 26.2% of study participants had less than a high school education compared with only 12% in the general Californian Thai population.[30] Thus, higher-risk Thai women may have been oversampled in this study population. Because of these selection biases, the sample population may not be representative of other Thai populations in the United States. Another limitation was the reliability of self-reported responses given by the women, as they may have underestimated the number of Pap tests they had received as well as the date of their last Pap test.

This study is the first to identify the baseline cervical cancer screening rates of Thai women in Northern California. For women who have ever received a Pap test, the results from this study underscore the need to enhance culturally appropriate patient-physician interactions to promote screening and increase knowledge about cervical cancer causes within this population. For women who have never had a Pap test, results from this study suggest that unemployment and limited English proficiency may serve as additional barriers that must be overcome through creative community-based approaches, such as mobile screenings at worksites and temples, patient navigation assistance, in-language educational materials, and media campaigns to promote awareness and knowledge of cervical cancer. Although our limitations note that the study sample may not be generalizable, other immigrant populations may share similar barriers to screening or lack of accurate knowledge about cervical cancer and, thus, may benefit from similar interventions developed for the Thai community. Longitudinal prospective studies, rather than the cross-sectional design used, will better serve to distinguish relationships between screening use and related risk factors. The results of this study hopefully will prompt more research into the unique needs of Thai women in the United States, as well as promote the development of cervical cancer screening programs for Thai and other immigrant AAPI underserved populations in this country.

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No competing financial interests exist.

REFERENCES

1. Vatanasapt V, Martin N, Sriplung H, et al. Cancer incidence in Thailand, 1988–1991. Cancer Epidemiol Biomarkers Prev 1995;4:475.
2. Vatanasapt V, Sriamporn S, Vatanasapt P. Cancer control in Thailand. Jpn J Clin Oncol 2002;32(Suppl):S82.
3. Parkin DM, Bray F. The burden of HPV-related cancers. Vaccine 2006;24S3:S3/11.
4. American Cancer Society. Cancer incidence and mortality rates. American Cancer Society, Atlanta, GA, 2000.
5. De Alba I, Ngo-Metzger Q, Sweningson JM, Hubbell FA. Pap smear use in California: Are we closing the racial/ethnic gap? Prev Med 2005;40:747.
6. Kagawa-Singer M, Pourat N. Asian American and Pacific Islander breast and cervical carcinoma screening rates and Healthy People 2000 objectives. Cancer 2000;89:696.
7. Coughlin SS, Uhler RJ. Breast and cervical cancer screening practices among Asian and Pacific Islander women in the United States, 1994–1997. Cancer Epidemiol Biomarkers Prev 2000;9:597.
8. Swan J, Breen N, Coates RJ, Rimer BK, Lee NC. Progress in cancer screening practices in the United States: Results from the 2000 National Health Interview Survey. Cancer 2003;97:1528.
9. Maxwell AE, Bastani R, Warda US. Breast cancer screening and related attitudes among Filipino-American women. Cancer Epidemiol Biomarkers Prev 1997;6:719.
10. Maxwell AE, Bastani R, Warda US. Demographic predictors of cancer screening among Filipino and Korean immigrants in the United States. Am J Prev Med 2000;18:62.
11. McPhee SJ, Stewart S, Brock KC, Bird JA, Jenkins CN, Pham GQ. Factors associated with breast and cervical cancer screening practices among Vietnamese American women. Cancer Detect Prev 1997;21:510.

12. Tang TS, Solomon LJ, Yeh CJ, Worden JK. The role of cultural variables in breast self-examination and cervical cancer screening behavior in young Asian women living in the United States. J Behav Med 1999; 22:419.
13. Taylor VM, Schwartz SM, Jackson JC, et al. Cervical cancer screening among Cambodian-American women. Cancer Epidemiol Biomarkers Prev 1999;8:541.
14. Taylor VM, Yasui Y, Burke N, et al. Pap testing adherence among Vietnamese American women. Cancer Epidemiol Biomarkers Prev 2004;13:613.
15. Wong-Kim E, Sun A, DeMattos MC. Assessing cancer beliefs in a Chinese immigrant community. Cancer Control 2003;10(Suppl 5):22.
16. Boonmongkon PPJ, Pylypa J, Nichter M. Emerging fears of cervical cancer in Northeast Thailand. Anthropol Med 1999;6:359.
17. Jirojwong S, Manderson L. Beliefs and behaviors about Pap and breast self-examination among Thai immigrant women in Brisbane, Australia. Women Health 2001;33:47.
18. U.S. Bureau of the Census. We the people: Asians in the United States. Washington, DC: U.S. Department of Commerce, 2004.
19. Wannasuntad S, May S, Mock J. The absence of cancer prevention for the Thai population in the U.S. Asian Am Pac Isl J Health 2003;10:108.
20. Tanjasiri SP, Tran JH, Kagawa-Singer M, et al. Exploring access to cancer control services for Asian-American and Pacific Islander communities in Southern California. Ethnic Dis 2004;14(Suppl 1):S14.
21. UCLA Center for Health Policy Research. California Health Interview Survey: Adult questionnaire 2001. Available at *http://www.chis.ucla.edu/pdf/CHIS2001_adult_q.pdf*
22. Centers for Disease Control and Prevention. National Health Interview Survey: Cancer control module 2000. Available at *http://www.cdc.gov/nchs/about/major/nhis/quest_data_related_1997_forward.htm*
23. Kagawa-Singer M, Tanjasiri SP, Lee SW, et al. Breast and cervical cancer control among Pacific Islander and Southeast Asian women: Participatory action research strategies for baseline data collection in California. J Cancer Educ 2006;21 (Suppl):S53.
24. Tanjasiri SP, Kagawa-Singer M, Nguyen TU, Foo MA. Collaborative research as an essential component for addressing cancer disparities among Southeast Asian and Pacific Islander women. Health Promotion Pract 2002;3:144.
25. Anderson J, Moeschberger M, Chen MS Jr., Kunn P, Wewers ME, Guthrie R. An acculturation scale for Southeast Asians. Soc Psychiatry Psychiatr Epidemiol 1993;28:134.
26. Centers for Disease Control and Prevention. National Breast and Cervical Cancer Early Detection Program—Reducing mortality through screening. Fact sheet, 2003.
27. U.S. Preventive Services Task Force. Screening for cervical cancer summary from Guide to clinical preventive services, 2005.
28. U.S. Department of Health and Human Services. Healthy people 2010: Understanding and improving health, 2000.
29. Ogedegbe G, Cassells AN, Robinson CM, et al. Perceptions of barriers and facilitators of cancer early detection among low-income minority women in community health centers. J Natl Med Assoc 2005;97:162.
30. Asian Pacific American Legal Center. The diverse face of Asians and Pacific Islanders in California. Los Angeles: APALC, 2005.

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