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PAP TESTING AMONG VIETNAMESE WOMEN: HEALTH CARE SYSTEM AND PHYSICIAN FACTORS

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Abstract

Cervical cancer occurs more frequently among Vietnamese Americans than women of any other race/ethnicity. In addition, previous studies in California have documented low Papanicolaou (Pap) testing rates in Vietnamese communities. This study focused on health care system factors and physician characteristics associated with recent cervical cancer screening among Vietnamese women. A population-based survey was conducted in Seattle during 2002. In-person interviews were conducted by bilingual, bicultural female survey workers. The survey response rate was 82% and 518 women were included in the analysis. Seventy-four percent of the respondents reported having been screened for cervical cancer on at least one occasion, and 64% reported a Pap smear within the previous 2 years. Women with a regular doctor were more likely to have been recently screened than those without a regular doctor (OR = 2.33, 95% CI = 1.45–3.74). Among those with a regular doctor, having a male physician, receiving care at a private doctor's office (rather than a community, hospital, or multi-specialty clinic), and concern about the cost of health care were independently associated with lower screening rates. Physician ethnicity was not associated with recent Pap smear receipt. The findings support targeted interventions for Vietnamese women without a regular physician and private doctors' offices that serve Vietnamese Americans. The availability of low cost screening services should be publicized in Vietnamese communities.

Keywords

cervical cancer; immigrants; Pap testing; Vietnamese

INTRODUCTION

In 2000, the United States (US) Census documented over one million Vietnamese.¹ Because of continued immigration and high fertility rates, there will be an estimated four million Vietnamese in the US by 2030, and they will soon constitute the second largest Asian subgroup.² Information from the Surveillance, Epidemiology, and End Results (SEER) program

shows that Vietnamese American women are over five times more likely to be diagnosed with invasive cervical cancer than their non-Latina White counterparts. SEER data also indicate that cervical cancer is the most commonly occurring invasive malignancy among Vietnamese American women (incidence rate of 43 per 100,000 compared to 38 per 100,000 for breast cancer).³ Given the high cervical cancer incidence rate among Vietnamese women, it is not surprising that studies have found that Vietnamese Americans report lower levels of Papanicolaou (Pap) testing use than any other racial/ethnic group.^{4,5}

There is a paucity of published information about the cervical cancer screening behavior of Vietnamese immigrants. Additionally, nearly all the previous population-based studies addressing Pap testing use among Vietnamese American women were conducted in California.^{5,6} We have initiated research to collect qualitative and quantitative information about the cervical cancer prevention behavior of Vietnamese American women, as well as to design and evaluate a culturally appropriate cervical cancer control outreach program. As part of this project, we conducted a population-based survey in Seattle, Washington during 2002. Our goal was to provide information about Pap testing barriers and facilitators that could be used to develop intervention strategies. For this report, we used our survey data to examine health care system factors and physician characteristics associated with interval adherence to Pap testing guidelines.

METHODS

Sampling Methods

Census data indicate that Seattle's Vietnamese community is concentrated in the southern part of the city.⁷ Therefore, our survey sample was drawn from seven contiguous south Seattle zip codes. McPhee and his colleagues have shown that over 95% of Vietnamese families share 23 last names.⁸ We applied this list of names to the 2001 telephone book for metropolitan Seattle. Specifically, we identified 1639 Vietnamese households (with one of the 23 names) that were located in the target zip codes. Nine hundred of these households were randomly selected for inclusion in the survey. Because 20 of these addresses were subsequently found to be duplicates, the final study sample included 880 households.

Household Recruitment

Our study procedures were approved by the University of Washington Institutional Review Board. We publicized the survey by placing posters about the study in community settings such as Vietnamese grocery stores. Households received an introductory mailing from the Medical Director of the International Medical Clinic at Seattle's county hospital. Bilingual, bicultural, female survey workers conducted interviews in women's homes. Participation incentives included posters depicting Vietnamese artwork as well as a summary of Seattle organizations providing social and health services to Vietnamese families. Each respondent was given the option of completing her survey in Vietnamese or English. As many as five door-to-door attempts were made to contact each household (including at least one daytime, one evening, and one weekend attempt). Each interview took approximately 45 min to complete.

Participant Selection

We aimed to interview one woman aged 18–64 years in each household. Our project collaborates with a coalition of Vietnamese community members. The coalition believed that the survey response rate would be negatively impacted if we attempted to list household members and then randomly select respondents in households with two or more age-eligible women. However, to ensure our sample was representative of different age-groups, we randomly assigned households to one of two groups: households where we initially asked to speak with a woman in the 18–39 age-group (and then asked to speak with a woman aged 40–

64 if there were no women in the younger age-group); and those where we initially asked to speak with a woman in the 40–64 age-group (and then asked to speak with a woman aged 18–39 if there were no women in the older age-group).

Survey Instrument

The survey instrument was developed in English, translated into Vietnamese, back-translated to ensure lexical equivalence, reconciled, and pre-tested.⁹ Respondents were read the following statement: “A Pap test is when a doctor does a pelvic exam and also takes a scraping of tissue from the cervix inside the vagina and sends it to a laboratory.” They were then asked whether they had ever had a Pap test and, if so, when they were last screened. Because routine Pap testing is not recommended for women without uteri, we also asked each woman if she had a history of hysterectomy.¹⁰ Survey participants were queried about their age, marital status, educational level, and household income. Respondents also specified how many years they had lived in the US and provided information about their English-language proficiency.

Women indicated whether they had medical insurance and, if so, whether they had Medicare, Medicaid, the Basic Health Plan (a Washington State plan for lower income families), or private insurance. To assess health status, women were asked how they would describe their health (i.e., excellent, very good, good, fair, or poor). Survey participants also specified if there was one doctor who usually provided their care. Those with a regular physician were asked to provide the name of their doctor and information about the hospital or clinic where he/she practiced (if applicable). They also provided information about their doctor’s gender and ethnicity (i.e., Vietnamese versus other). Finally, respondents were queried about the following potential barriers to health care: difficulties getting time off work (yes, no, or not applicable), cost concerns, and problems finding an interpreter (yes, no, or not applicable).

Data Analysis

Authorities recommend regular Pap tests at intervals of one to three years, depending on a woman’s risk for disease and previous screening history.^{10,11} However, physicians in the Seattle area usually offer cervical cancer screening at least once every two years. As this analysis focused on health care system and physician factors, we compared the characteristics of women who had and had not received Pap testing within the last 24 months. Proportion of life in the US (which is considered to be a good surrogate of acculturation) was calculated from responses to questions about current age and years of residence in the US.¹² Because our study excluded women aged 65 and older, few respondents were covered by Medicare. Therefore, Medicare and Medicaid were combined into a category called “public insurance” for the purpose of this analysis. However, the Washington Basic Health Plan was grouped separately. Information provided by women with a regular physician was used to classify each doctor’s practice setting as a community or county hospital clinic (i.e., low income provider), other hospital or multi-specialty clinic, or private doctor’s office.

The Chi-square test was used to assess statistical significance in bivariate comparisons.¹³ We used unconditional logistic regression models to summarize the independent association of individual factors on cervical cancer screening participation.¹⁴ Variables were included in multiple logistic regression models based on a significance level of $p < .10$ in the bivariate analysis. In assessing the independent effects of regular physician characteristics, we limited the logistic regression analysis to women with a regular provider.

RESULTS

Study Sample

Our questionnaire was completed by 544 women. The disposition of the remaining 336 addresses in the original sample was as follows: not a residential address (i.e., vacant dwelling or business)—44, eligibility not established (i.e., no contact after five attempts)—21, verified to be ineligible (i.e., household not Vietnamese or no Vietnamese woman aged 18–64 years)—165, and eligible but refused—106. The overall estimated response rate was 82% (assuming the proportion of eligible households was the same among those that were and were not contactable) and the cooperation rate (i.e., response among reachable and eligible households) was 84%. Five hundred and thirty two (97%) of the respondents completed the survey in Vietnamese. Ten women were excluded from the analysis because they did not provide sufficient information about their Pap testing history, and a further 16 were excluded because they were without uteri. Therefore, the final sample included 518 respondents.

Study Group Characteristics

All the women who completed our questionnaire were born in Southeast Asia. The study group characteristics are given in Tables 1–4. Forty five percent were less than 40 years of age, 12% had never been married, 50% had at least a high school education, and 35% reported an annual household income of less than \$20,000. About one-half (54%) of the study group had spent less than 25% of their life in the US, and only 14% spoke English “fluently” or “well.” The majority had health insurance (90%) and a regular provider (80%). Forty-four percent of those with health insurance were covered by a public payer or the Washington State Basic Health Plan. Among women with a regular health care provider, 51% had a male physician, 55% had a Vietnamese physician, and 30% reported their physician practiced at the county hospital or a community clinic. Only 10% of the survey respondents described their health as being “excellent” or “very good.” Relatively few women reported difficulties getting time off work (13%) or problems finding an interpreter (13%) were barriers to health care. Finally, approximately one-third (32%) of our respondents reported concern about cost as a barrier.

Pap Testing Behavior

Three hundred and eighty three (74%) of the women in our study sample reported they had received Pap testing on at least one occasion, and 332 (64%) had been screened within the last 2 years. Tables 1–4 provide bivariate comparisons for the women who had received Pap testing in the last 2 years and the women who had not received recent cervical cancer screening; p-values are given for those variables with a p-value of $< .10$. The following characteristics were associated ($p < .05$) with recent cervical cancer screening in bivariate comparisons: older age, being married, having health insurance, having a regular physician, and not having cost concerns. There was no association between type of health insurance and Pap test receipt. Among those with a regular physician, practice setting was associated with Pap testing within the preceding two years ($p < .001$). Specifically, women who reported receiving care at a private doctor’s office were less likely to report cervical cancer screening. Additionally, women with a recent Pap smear were more likely to have a female than a male doctor ($p = .001$).

We conducted two multiple logistic regression analyses. The first analysis included all women in the study group; and examined the independent associations between age, marital status, health insurance, regular physician, cost concerns, and recent cervical cancer screening. The following characteristics were independently associated with Pap test receipt: older age ($p = .03$), being married ($p = .001$), and having a regular physician ($p < .001$). Odds ratios (OR) and 95% confidence intervals (CI) are given in Table 5. Our second analysis focused on physician characteristics and, therefore, was restricted to the 412 women who reported they had a regular doctor. The following physician characteristics were included in the model: practice setting,

gender, and ethnicity. Age, marital status, health insurance, and cost concerns were also included as potentially confounding factors. In this logistic regression analysis, having a male physician ($p = .01$), receiving health care at a private doctor's office ($p = .01$), and concern about cost ($p = .03$) were negatively associated with recent screening (Table 6).

DISCUSSION

The Healthy People 2010 objectives specify that 97% of women aged 18 and older should have received at least one Pap test.¹⁵ These goals have already been met in some populations. For example, Hiatt et al. reported that 99% of White and 98% of Black women in San Francisco had been screened on at least one occasion.⁴ However, we found that current levels of cervical cancer screening among Vietnamese American women do not even approach these national goals. Specifically, less than three-quarters (74%) of our Seattle sample reported ever having received Pap testing, and only 64% reported a Pap smear within the preceding two years. These findings are consistent with a recent study by Nguyen et al. that found 78% of Vietnamese women in Santa Clara County, California and 74% of Vietnamese women in Harris County, Texas had ever been screened for cervical cancer.⁶ Similarly, in another study of Southeast Asian women, we found that 76% of Cambodian American women in Seattle had received Pap testing at least once.¹⁶

Previous studies of Vietnamese American populations have consistently reported an association between marital status and cervical cancer screening adherence.^{5,6,17} We also found that married women were more likely to have been screened in the preceding 2 years than never married women. In a study that included unmarried, sexually active Vietnamese women, the belief that only married women need a Pap test was associated with Pap testing receipt.^{6,18} Unmarried women are less likely to be receiving family planning or obstetric services which provide an opportunity for cervical cancer screening.⁵ Additionally, the stigma associated with extra-marital sexual activity in Vietnamese culture may also deter unmarried women from getting Pap smears.⁶

Nguyen et al. reported that having a regular doctor was not associated with Pap test receipt among Vietnamese women in their California and Texas study samples.⁶ As in previous studies of other racial/ethnic minority groups, we found that having a regular doctor positively impacted Pap testing use among Vietnamese women in Washington.^{16,19,20} Specifically, women with a regular physician had over twice as high odds of having been screened for cervical cancer within the last two years than those without a regular physician. Earlier California studies demonstrated that Vietnamese women with a Vietnamese doctor were less likely to be screened than those with a non-Vietnamese doctor.^{2,21} We did not find an association between physician ethnicity and interval adherence to screening guidelines. This trend may reflect a greater orientation toward prevention among Vietnamese trained doctors over time and/or an increasing proportion of US trained Vietnamese doctors.⁶

Our results showed that women with a female physician were more likely to have received a recent Pap test than women with a male physician. This finding may reflect Vietnamese women's reluctance to accept gynecologic care from a male health care provider. Alternatively, it may reflect a greater commitment to routine Pap testing among female doctors. Unlike previous studies, we specifically examined the relationship between physician practice setting and Pap testing. Women whose regular doctor practiced in a private office were less likely to have received a recent Pap smear than other women with a regular doctor. Private offices are less likely to have preventive care reminder systems than hospitals and clinics.²² Also, it is easier for male physicians practicing in clinic systems to refer women to a female colleague for gynecologic care.

Interpreter services have been shown to positively impact the delivery of health care to limited English speaking patients.²³ Although only 14% of our Vietnamese respondents spoke English “fluently” or “very well”, relatively few (13%) reported difficulty finding an interpreter was a barrier to health care. In our previous study of Cambodian women, over one-half (57%) of the respondents reported problems finding an interpreter.¹⁶ Our survey of Cambodian women was conducted in late 1997 and early 1998, and this discrepancy may reflect the success of recent Federal and Washington State initiatives to improve linguistic access to care. Alternatively, it may reflect differences in the availability of Vietnamese and Khmer speaking physicians.

The national Breast and Cervical Cancer Early Detection Program provides no-cost cervical cancer screening services to low income individuals. This program, which is administered through the county hospital and community clinics, has actively targeted Seattle’s Asian American communities. Despite the existence of this program, we found concern about cost was associated with lower levels of Pap test receipt among Vietnamese women with a regular doctor.

The reported study has several limitations that warrant discussion. First, we recruited households in areas of Seattle with a relatively high proportion of Vietnamese residents. Our findings may not be generalizable to other geographic areas or Vietnamese who live in communities with small Asian American populations. Second, only households with listed telephone numbers associated with complete address information were eligible for the survey; it is unclear to what extent such households are representative of Seattle’s Vietnamese community.²⁴ Third, survey respondents may have had different preventive behavior patterns than those who were unreachable or refused participation.²⁵ Last, self-reports may be faulty due to inaccurate recall or desirability bias.^{26,27} Since ethnic minority women tend to over-report screening test receipt when compared to non-Latina White women, it is likely that our study over-estimated levels of recent Pap testing use among Vietnamese American women.²⁶

Our study has several major strengths. Specifically, we used population-based sampling methods, administered the survey face-to-face, and had a high response rate. In conclusion, we found that low levels of cervical cancer screening participation in Vietnamese American communities remain a significant public health problem. Educational interventions for Vietnamese women should specifically target women who are unmarried and/or without a regular doctor. Intervention programs should also target private doctors’ offices that serve Vietnamese patients. Finally, increasing awareness of the Breast and Cervical Cancer Early Detection Program may facilitate Pap testing among lower income Vietnamese American women. We are currently conducting an outreach worker intervention for Vietnamese women who have never been screened for cervical cancer. Outreach workers are trained to refer women without a regular doctor to a local clinic, encourage women with a male physician to ask him to arrange for Pap testing through a female provider (if a woman reports her doctor’s gender is a barrier to gynecologic care), and provide information about the Breast and Cervical Cancer Early Detection Program.

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TABLE 1
Bivariate Associations of Sociodemographic Variables with Recent Pap Testing ($N = 518$)

<i>Variable</i>	<i>n (%)</i>	<i>Pap testing in last two years</i>	<i>p-value^a</i>
Age (years)			
<30	68 (13)	47	0.008
30–39	162 (31)	70	
40–49	105 (20)	69	
≥50	181 (35)	63	
Marital status			
Currently married	422 (81)	67	<0.001
Previously married	34 (7)	68	
Never married	62 (12)	40	
Education (years)			
<6	109 (21)	65	NS
6–11	148 (29)	67	
≥12	255 (50)	63	
Household income (\$)			
<20,000	180 (35)	62	NS
20,000–40,000	156 (30)	67	
≥40,000	114 (22)	67	
Unknown	68 (13)	60	

^aNS: not significant (variable was not significant and did not demonstrate a trend towards statistical significance; $p < .10$).

TABLE 2
Bivariate Associations of Acculturation, Health Insurance, and Health Status with Recent Pap Testing (N = 518)

<i>Variable</i>	<i>n (%)</i>	<i>Pap testing in last two years</i>	<i>p-value^a</i>
Proportion of life in US (%)			
< 25	279 (54)	65	NS
25–49	192 (37)	64	
≥ 50	44 (9)	64	
English proficiency			
Speaks fluently or well	74 (14)	61	NS
Speaks quite well	111 (21)	65	
Does not speak well or at all	333 (64)	65	
Has health insurance			
Yes	463 (90)	66	0.02
No	54 (10)	50	
Insurance type ^b			
Private	259 (56)	65	NS
Public	129 (28)	69	
Basic health plan	75 (16)	64	
Self-reported health status			
Excellent or very good	49 (10)	65	NS
Good	257 (50)	68	
Fair or poor	209 (41)	59	

^aNS: not significant (variable was not significant and did not demonstrate a trend towards statistical significance; $p < .10$).

^bRestricted to women with health insurance.

TABLE 3
Bivariate Associations of Physician Variables with Recent Pap Testing (n = 518)

<i>Variable</i>	<i>n (%)</i>	<i>Pap testing in last two years</i>	<i>p-value</i>
Has regular physician			
Yes	412 (80)	68	<0.001
No	106 (20)	47	
Regular physician gender ^a			
Male	211 (51)	61	0.001
Female	201 (49)	76	
Regular physician ethnicity ^a			
Vietnamese	228 (55)	64	0.06
Other	183 (45)	73	
Regular physician practice setting ^a			
Community or county hospital clinic	123 (30)	76	<0.001
Other hospital or multispecialty clinic	128 (32)	76	
Private doctor's office	153 (38)	57	

^a Restricted to women with a regular physician.

TABLE 4
 Bivariate Associations of Self-reported Barriers with Recent Pap Testing (n = 518)

<i>Variable</i>	<i>n (%)</i>	<i>Pap testing in last two years</i>	<i>p-value^a</i>
Difficulties getting time off work			
Yes	69 (13)	65	NS
No	449 (87)	64	
Cost concerns			
Yes	166 (32)	57	0.02
No	349 (68)	68	
Problems finding an interpreter			
Yes	69 (13)	59	NS
No	449 (87)	65	

^a NS: not significant (variable was not significant and did not demonstrate a trend towards statistical significance; $p < .10$).

TABLE 5

Logistic Regression Analysis of Variables Independently Associated with Recent Pap Testing among All Women (n = 518)

<i>Variable</i>	<i>OR</i>	<i>CI (95%)</i>
Age (years)		
< 30	0.92	0.49–1.72
30–39	1.88	1.15–3.06
40–49	1.57	0.92–2.68
≥ 50\	1.00	
Marital status		
Currently married	2.54	1.39–4.65
Previously married	2.49	0.96–6.43
Never married	1.00	
Health insurance		
Yes	1.10	0.57–2.12
No	1.00	
Regular provider		
Yes	2.33	1.45–3.74
No	1.00	
Cost concerns		
Yes	0.67	0.44–1.03
No	1.00	

TABLE 6

Logistic Regression Analysis of Variables Independently Associated with Recent Pap Testing among Women who had a Regular Doctor (n = 412)

<i>Variable</i>	<i>OR</i>	<i>CI (95%)</i>
Age (years)		
< 30	0.54	0.25–1.16
30–39	1.38	0.77–2.47
40–49	1.41	0.74–2.69
≥50	1.00	
Marital status		
Currently married	2.28	1.07–4.86
Previously married	2.06	0.67–6.29
Never married	1.00	
Health insurance		
Yes	1.05	0.42–2.66
No	1.00	
Regular physician gender		
Male	0.53	0.33–0.88
Female	1.00	
Regular physician ethnicity		
Vietnamese	1.27	0.75–2.16
Other	1.00	
Regular physician practice setting		
Community or county hospital clinic	2.30	1.26–4.21
Other hospital or multi-specialty clinic	2.04	1.14–3.63
Private doctor's office	1.00	
Cost concerns		
Yes	0.59	0.36–0.98
No	1.00	