

Impact of Length of U.S. Residence and Health Insurance on Mammography Screening in Vietnamese American Women

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Background

- Vietnamese Americans are one of the fastest growing racial/ethnic groups in the U.S.
 - 83% population increase, 1990-2000
- Vietnamese in the U.S. constitute the largest population of Vietnamese outside Vietnam
- According to the 2000 Census, there are over 1.12 million Vietnamese in the U.S.

Vietnamese Immigration to the U.S.



- The vast majority of Vietnamese Americans are not U.S.-born. Most immigrated to the U.S. following the end of the Vietnam War in 1975
- There were several waves of immigration:
 1. Pre-1975: high SES, military families
 2. Post-1975 and early 1980's: "boat people" immigrants, lower SES
 3. Late 1980's through 1990's: family reunification immigrants, "re-education" camp detainees

Sociodemographics

- Among Vietnamese women aged ≥ 40 years (the recommended age group for mammography screening):
 - 99% were born in Vietnam
 - 62% have limited English proficiency
 - 15% are below the federal poverty line

Breast Cancer Epidemiology in Vietnamese

- Breast cancer is the leading cancer in Vietnamese American women and the second leading cause of cancer death
- Vietnamese women tend to be diagnosed at more advanced stages of disease and experience greater risk of mortality from breast cancer
- Migrant studies have shown that breast cancer is more common among Vietnamese in the U.S. than in their native country

Breast Cancer Screening in Vietnamese

- Previous research has shown that Vietnamese women experience barriers to accessing cancer screening services
- Low educational attainment, not having a regular doctor, and lack of health insurance are associated with low utilization of cancer screening
- Numerous studies of birthplace, acculturation, and utilization have been conducted among Latino populations, but little is known about the largely foreign-born Vietnamese population

Research Aim

- To examine the relationship between length of U.S. residence, health insurance, and mammography receipt among Vietnamese American women, using a large population-based sample

Methods: Data Source

Data Source:

- Cross-sectional baseline survey of knowledge, attitudes, and cancer screening practices conducted prior to implementation of a community-based intervention to promote breast cancer screening among Vietnamese
- Survey conducted in 2004 in Santa Clara County, CA (intervention site, n=597) and Harris County, TX (control site, n=622)

Intervention
Methods
Example:

Vietnamese-
English
Breast
Cancer
Education
Booklet



Methods: Study Sample

- Survey participants were selected randomly from a list of telephone numbers generated using the 37 most common Vietnamese surnames
- Eligible respondents: aged ≥ 18 , residence in Santa Clara County or Harris County, self-identified as Vietnamese, Vietnamese American, or Chinese born or lived in Vietnam (Chinese Vietnamese)
- Vast majority (96%) of surveys were conducted in the Vietnamese language
- 63% response rate in Santa Clara County and 54% in Harris County, yielding an overall response rate of 59%

Methods: Measurements

Sociodemographic variables: age, year of immigration to the U.S., highest level of education completed, employment status, poverty status (based on household size)

Health care access: type of health insurance, if any; if they had a regular place of care; if they usually used a translator; if they had a regular physician; if so, physician ethnicity, gender; respondent perceptions of discrimination and attitudes toward health care system

Methods: Measurements

Primary exposure

Length of residence categorized as:

1. Recent immigrants: ≤ 10 years residence in the U.S.
2. Intermediate immigrants: 11-19 years
3. Long-term immigrants: ≥ 20 years

Methods: Measurements

Primary outcomes

Receipt of mammography:

1. Never received a mammogram
2. No mammogram within past 2 years

Methods: Data Analysis

- Analyses restricted to women aged ≥ 40 years
- Final analytic sample consisted of 1,219 participants
- Bivariate chi-square tests to test basic associations between length of residence and each explanatory variable with breast cancer screening outcomes
- Statistical significance: $p < 0.05$ for all statistical tests

Methods: Data Analysis

- Multivariate logistic regression used to model the independent relationship between length of residence and breast cancer screening outcomes
- Hosmer-Lemeshow goodness-of-fit test
- Assessed collinearity in model using Pearson correlation coefficients

Results:

Sociodemographic Characteristics (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Age, mean \pm SD (years)	55.4 (10.4)	56.6 (10.4)	55.2 (10.7)	55.9 (10.5)	0.10

Results:

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Ethnicity					
Vietnamese/Vietnamese American	85.3	86.3	86.5	86.1	0.65
Chinese Vietnam	14.7	13.7	13.5	14.0	

Results:

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Speaks English poorly	76.3	60.9	37.6	58.0	<.0001

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Less than high school education	51.6	50.7	38.7	47.1	0.0004

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Speaks English poorly	76.3	60.9	37.6	58.0	<.0001
Less than high school education	51.6	50.7	38.7	47.1	0.0004
Unemployed	59.1	61.2	47.7	56.2	0.001

Results:

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Less than high school education	51.6	50.7	38.7	47.1	0.0004
Unemployed	59.1	61.2	47.7	56.2	0.001
Never married	5.9	6.8	5.9	6.2	0.99

Results:

Sociodemographic Characteristics (%)

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Less than high school education	51.6	50.7	38.7	47.1	0.0004
Unemployed	59.1	61.2	47.7	56.2	0.001
Never married	5.9	6.8	5.9	6.2	0.99
Below poverty level	35.7	29.3	23.7	29.4	0.0004

Results: Access to Health Care (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
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Results: Access to Health Care (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Currently uninsured	26.9	19.7	17.9	21.2	0.07

Results: Access to Health Care (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Currently uninsured	26.9	19.7	17.9	21.2	0.07
Has Medicaid	27.5	27.2	13.8	23.0	<.0001

Results: Access to Health Care (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Currently uninsured	26.9	19.7	17.9	21.2	0.07
Has Medicaid	27.5	27.2	13.8	23.0	<.0001
Has usual place of care	80.6	88.2	87.5	85.7	0.01

Results: Access to Health Care (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Currently uninsured	26.9	19.7	17.9	21.2	0.07
Has Medicaid	27.5	27.2	13.8	23.0	<.0001
Has usual place of care	80.6	88.2	87.5	85.7	0.01
Has regular physician	87.8	91.1	90.1	90.1	0.19

Results: Physician Characteristics and Respondent Attitudes Toward Healthcare System (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
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Results: Physician Characteristics and Respondent Attitudes Toward Healthcare System (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Has regular physician who is Vietnamese	93.4	92.6	75.0	87.0	<.0001

Results: Physician Characteristics and Respondent Attitudes Toward Healthcare System (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Has regular physician who is Vietnamese	93.4	92.6	75.0	87.0	<.0001
Has regular physician who is female	17.4	20.5	31.1	23.1	<.0001

Results: Physician Characteristics and Respondent Attitudes Toward Healthcare System (%)

	Recent Immigrants (n=360)	Intermediate Immigrants (n=467)	Long-term immigrants (n=293)	Total (N=1,219)	p-value
Has regular physician who is Vietnamese	93.4	92.6	75.0	87.0	<.0001
Has regular physician who is female	17.4	20.5	31.1	23.1	<.0001
Trusts physician to do what is best for patient	82.9	77.4	73.3	77.7	0.002

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Has regular physician who is female	17.4	20.5	31.1	23.1	<.0001
Trusts physician to do what is best for patient	82.9	77.4	73.3	77.7	0.002
Thinks healthcare system treats people unfairly based on race	75.4	70.8	66.3	70.7	0.01

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Thinks healthcare system treats people unfairly based on race	75.4	70.8	66.3	70.7	0.01
Thinks healthcare system treats people unfairly based on speech	73.5	67.6	65.0	68.4	0.03

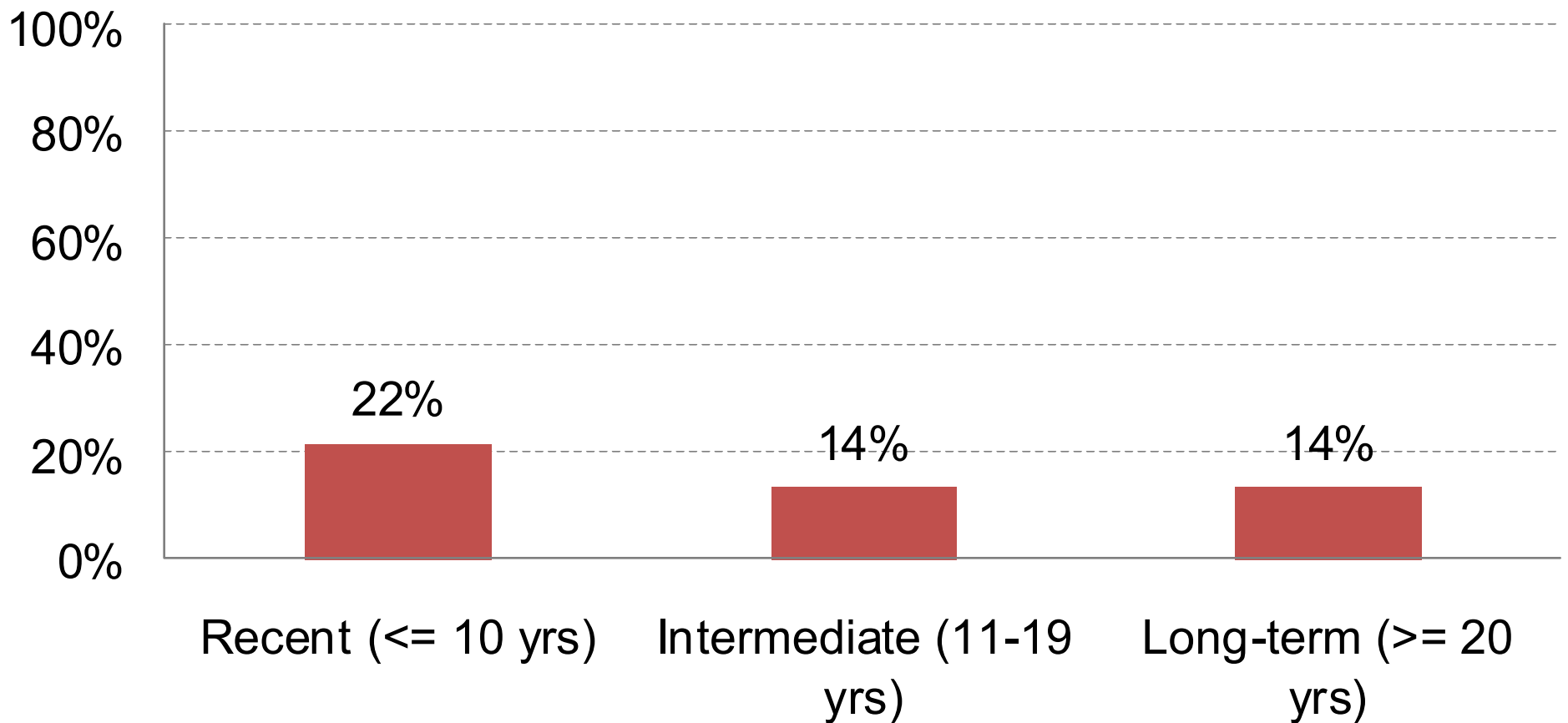
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Thinks healthcare system treats people unfairly based on race	75.4	70.8	66.3	70.7	0.01
Thinks healthcare system treats people unfairly based on speech	73.5	67.6	65.0	68.4	0.03
Physician explains things in a way respondent can understand	74.7	83.2	84.5	81.1	0.001

Results: Physician Characteristics and Respondent Attitudes Toward Healthcare System (%)

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Trusts physician to do what is best for patient	82.9	77.4	73.3	77.7	0.002
Thinks healthcare system treats people unfairly based on race	75.4	70.8	66.3	70.7	0.01
Thinks healthcare system treats people unfairly based on speech	73.5	67.6	65.0	68.4	0.03
Physician explains things in a way respondent can understand	74.7	83.2	84.5	81.1	0.001
Physician treats respondent with respect	91.2	95.4	95.4	94.2	0.02

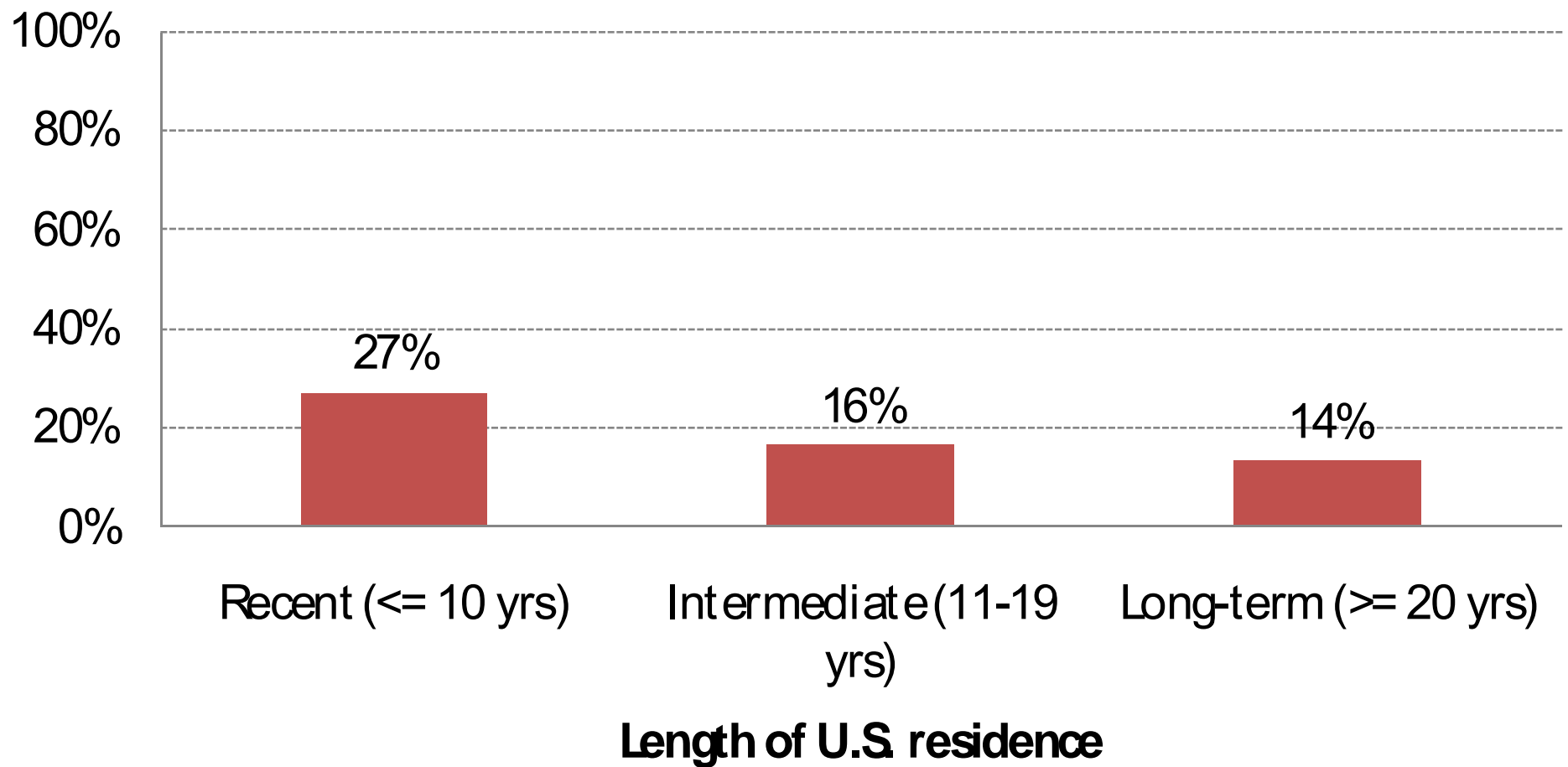
Results: Never Heard of Mammogram (%)



Length of U.S. residence

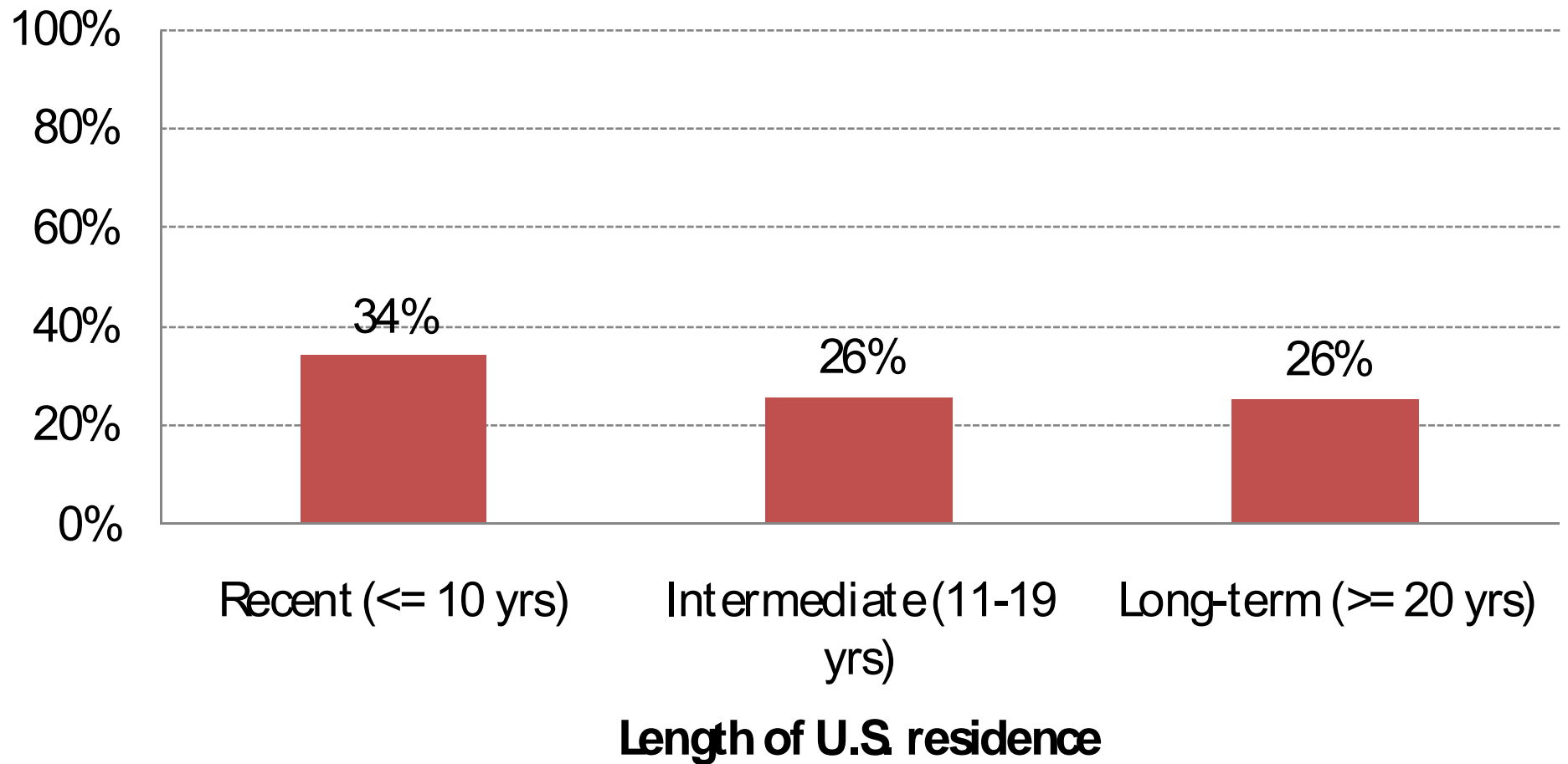
$p = 0.002$

Results: Never Had a Mammogram (%)



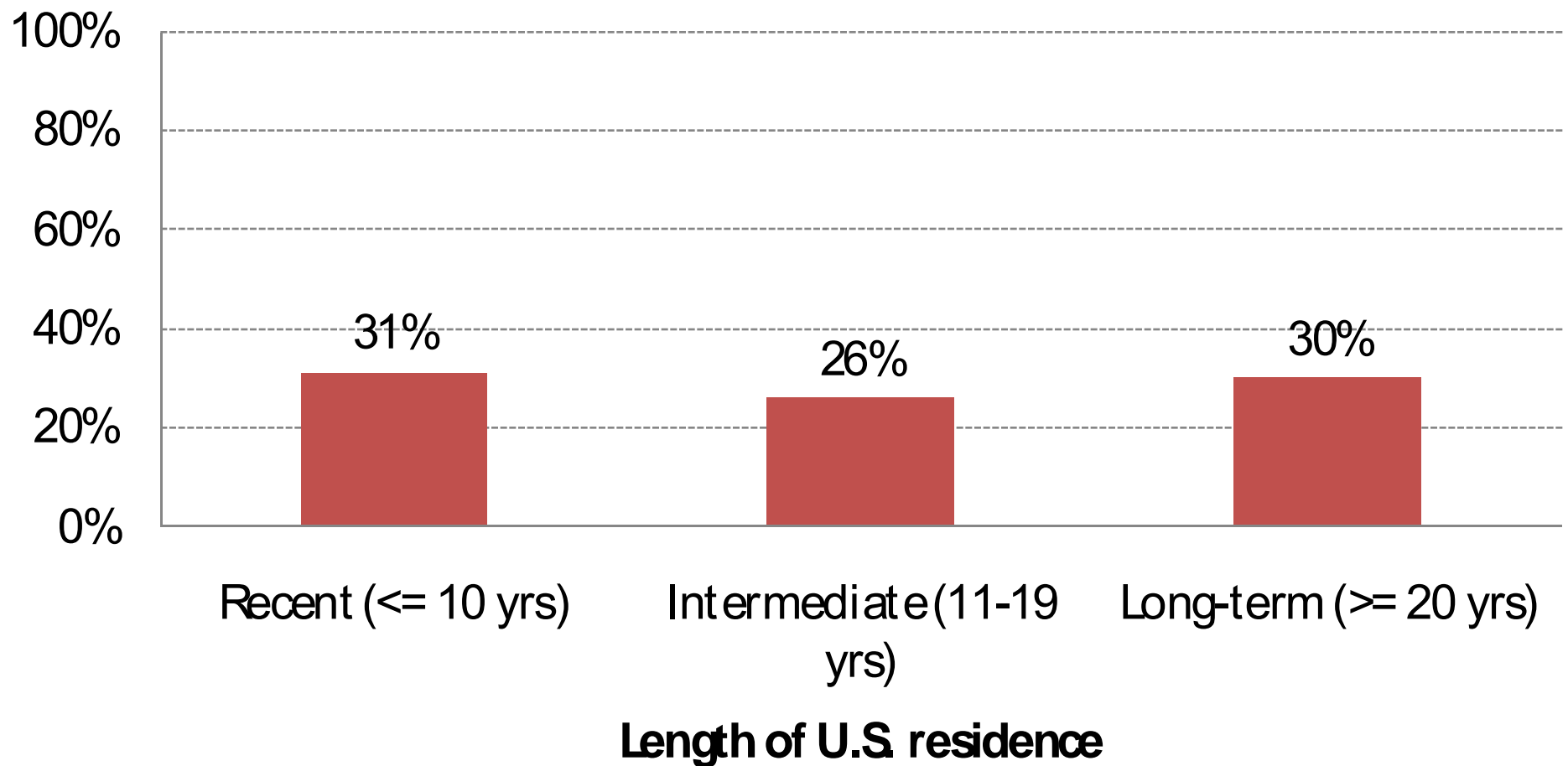
$p < .0001$

Results: No Mammogram in Past 2 Years (%)



$p = 0.01$

Results: Planning to Have Mammogram in Next 12 Months (%)



$p = 0.3$

Results: Multivariate Models for Never Receiving a Mammogram

	Model 1	
	OR	95% CI
Length of U.S. residence		
Long-term (ref)	1.0	-
Intermediate	1.9	1.4-2.7
Recent	2.4	1.7-3.5

Model 1: Unadjusted

Results: Multivariate Models for Never Receiving a Mammogram

	Model 1		Model 2	
	OR	95% CI	OR	95% CI
Length of U.S. residence				
Long-term (ref)	1.0	-	1.0	-
Intermediate	1.9	1.4-2.7	1.9	1.4-2.7
Recent	2.4	1.7-3.5	2.4	1.7-3.5

Model 1: Unadjusted

Model 2: Adjusted for age, site, language, education, poverty status, physician gender and ethnicity, understanding and respect of physician, and performance of monthly breast self-exams

Results: Multivariate Models for Never Receiving a Mammogram

	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Length of U.S. residence						
Long-term (ref)	1.0	-	1.0	-	1.0	-
Intermediate	1.9	1.4-2.7	1.9	1.4-2.7	1.2	0.8-1.9
Recent	2.4	1.7-3.5	2.4	1.7-3.5	1.8	1.2-2.9

Model 1: Unadjusted

Model 2: Adjusted for age, site, language, education, poverty status, physician gender and ethnicity, understanding and respect of physician, and performance of monthly breast self-exams

Model 3: Adjusted for all variables in Model 2, with the addition of health insurance

Results: Multivariate Models for Never Receiving a Mammogram

	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Length of U.S. residence						
Long-term (ref)	1.0	-	1.0	-	1.0	-
Intermediate	1.9	1.4-2.7	1.9	1.4-2.7	1.2	0.8-1.9
Recent	2.4	1.7-3.5	2.4	1.7-3.5	1.8	1.2-2.9
Health insurance						
Currently insured (ref)					1.0	-
No insurance					1.8	1.2-2.7

Model 1: Unadjusted

Model 2: Adjusted for age, site, language, education, poverty status, physician gender and ethnicity, understanding and respect of physician, and performance of monthly breast self-exams

Model 3: Adjusted for all variables in Model 2, with the addition of health insurance

Results: Multivariate Models for No Mammogram in Past 2 Years

	Model 1	
	OR	95% CI
Length of U.S. residence		
Long-term (ref)	1.0	-
Intermediate	1.1	0.8-1.4
Recent	1.2	0.9-1.7

Model 1: Unadjusted

Results: Multivariate Models for No Mammogram in Past 2 Years

	Model 1		Model 2	
	OR	95% CI	OR	95% CI
Length of U.S. residence				
Long-term (ref)	1.0	-	1.0	-
Intermediate	1.1	0.8-1.4	0.8	0.6-1.2
Recent	1.2	0.9-1.7	1.1	0.7-1.6

Model 1: Unadjusted

Model 2: Adjusted for age, site, language, education, poverty status, physician gender and ethnicity, understanding and respect of physician, and performance of monthly breast self-exams

Results: Multivariate Models for No Mammogram in Past 2 Years

	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
Length of U.S. residence						
Long-term (ref)	1.0	-	1.0	-	1.0	-
Intermediate	1.1	0.8-1.4	0.8	0.6-1.2	0.8	0.6-1.2
Recent	1.2	0.9-1.7	1.1	0.7-1.6	1.1	0.7-1.6

Model 1: Unadjusted

Model 2: Adjusted for age, site, language, education, poverty status, physician gender and ethnicity, understanding and respect of physician, and performance of monthly breast self-exams

Model 3: Adjusted for all variables in Model 2, with the addition of health insurance

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Long-term (ref)	1.0	-	1.0	-	1.0	-
Intermediate	1.1	0.8-1.4	0.8	0.6-1.2	0.8	0.6-1.2
Recent	1.2	0.9-1.7	1.1	0.7-1.6	1.1	0.7-1.6
Health insurance						
Currently insured (ref)					1.0	-
No insurance					1.8	1.3-2.7

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Model 2: Adjusted for age, site, language, education, poverty status, physician gender and ethnicity, understanding and respect of physician, and performance of monthly breast self-exams

Model 3: Adjusted for all variables in Model 2, with the addition of health insurance

Summary

- Among Vietnamese, length of U.S. residence is associated with never receiving a screening mammogram, but not with mammogram re-screening
- Odds of never receiving a mammogram or a mammogram within 12 months was most pronounced among recent immigrants
- Health insurance attenuated the effect of immigration status on mammography screening, but did not entirely explain the effect of length of U.S. residence on screening

Discussion

- Our findings are consistent with previous findings in the Latino population who have high rates of never receiving a screening mammogram even after adjustment for sociodemographic and access to health care factors
- The residual effect of length of U.S. residence suggests other factors for which it may serve as a proxy or marker, e.g., acculturation factors

Conclusions

- Eliminating health disparities among racial/ethnic and immigrant groups remain a high national priority for the health of the public
- Our findings suggest that we can improve mammography screening among Vietnamese American women by reaching out to recent immigrants to ensure that they have access to screening services