Comparison of Lifestyle Behaviors and Reproductive Characteristics between Healthy Mexican and Mexican-American Women





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BACKGROUND

- Breast cancer is the most common cancer diagnosed in women worldwide and the leading cause of cancer death
- The average annual age-adjusted incidence of breast cancer is higher among women in the U.S. than among women in Mexico, and within the U.S., incidence differs by race/ethnicity
- Although Hispanic women in the U.S. have lower incidence of breast cancer than non-Hispanic White women, breast cancer risk increases with increasing duration of residence
- Once Mexican women migrate to the U.S. and with increasing duration of time living in the U.S., reproductive and other lifestyle behaviors are likely to mirror those of non-Hispanic White women

OBJECTIVES

Determine differences in behaviors associated with increased risk of breast cancer between healthy women of Mexican descent by:

- a. Country of Residence: Living in Mexico (Mexican) vs. U.S. (Mexican-American)
- b. Country of Birth: Mexican-Americans born in Mexico (Mexican-born) vs. U.S. (U.S.-born)

Hypotheses

- a. **Mexican-American** women will report a greater frequency of engagement in behaviors that are associated with increased risk of breast cancer compared to **Mexican** women
- b. **Among Mexican-Americans**: **U.S.-born** women will report a greater frequency of engagement in behaviors that are associated with increased risk of breast cancer compared to **Mexican-born** women



METHODS

Data collection

Mammographic Patterns, Peptide C, and Growth Factors (CAMA)

- Healthy Mexican controls (n = 1,074), ages 33 72, were identified from a population-based case-control study of breast cancer conducted in three regions of Mexico (Mexico City, Monterrey and Veracruz) between 2004 and 2007
- In-person interviews were conducted with all participants, who provided information on health, physical activity, and diet
- Anthropometric measures were taken at time of interview

National Health and Nutrition Examination Survey (NHANES)

- Healthy Mexican-American women of the same ages with no history of breast cancer (n=281) were identified from the 2005 2006 NHANES, which examines a nationally representative sample of the U.S. population each year
- Of 281 Mexican-American women, 172 were born in Mexico and 108 were born in the U.S.
- In-person interviews were conducted with all participants, who provided information on health, physical activity, and diet
- Anthropometric measures were taken at time of interview

Data measures

Information on known risk factors for breast cancer (demographic, lifestyle, and reproductive) was collected for all CAMA and NHANES participants through in-person interviews

Data analysis

- Summary statistics for demographic characteristics, lifestyle behaviors and reproductive factors were computed separately for each of the four groups
- Similarity of participants was assessed by comparing populations with respect to demographic, lifestyle and reproductive factors
 - **Mexican** women (from CAMA) were compared to **Mexican-American** women overall (from NHANES)
 - Within the NHANES sample, **Mexican-American** women were compared to one another with respect to country of birth (**Mexican-born vs. U.S.-born**), and between-group differences were assessed using chi-square tests (categorical variables) and t-tests assuming unequal variances (continuous variables)

RESULTS

Mexican vs. Mexican-American women

 Mexican and Mexican-American women were similar with respect to age, education and marital status, BMI, age at menarche, age at menopause, history of ever being pregnant, age at first birth and parity

Several differences between groups were identified: (Tables 1 and 2)

- Mexican-American women appeared <u>more</u> likely than Mexican women to report:
- Any alcohol intake in the past year
- Ever using oral contraceptives
- Ever using postmenopausal hormone therapy
- Mexican-American women appeared <u>less</u> likely than Mexican women to report:
 - Ever breastfeeding any children

Mexican-American women (NHANES): Mexican-born vs. U.S.-born

 Mexican-born and U.S.-born women were similar with respect to age, BMI, smoking, any alcohol intake in the past year, age at menopause, parity, and age at first birth

Several significant differences between groups were identified: (Tables 1 and 2)

- **U.S.-born** women had a higher level of education, and were less likely to be married or living with a long-term partner than **Mexican-born** women
- U.S.-born women reported younger average age at menarche compared to Mexican-born women
- U.S.-born women were significantly <u>more</u> likely than Mexican-born women to report:
 - Ever using oral contraceptives
 - Ever using postmenopausal hormone therapy
- U.S.-born women were significantly <u>less</u> likely than Mexican-born women to report:
- Ever being pregnant
- Ever breastfeeding any children

Table 1. Comparison of demographic and lifestyle characteristics by country of residence and country of birth

(n = 1074) %	(n = 281) %	(n = 172) %	(n = 108) %	p-value
51.1 (9.2)	46.6 (0.7)	45.3 (1.1)	48.5 (1.6)	0.166
27.2	25.6	10.6	49.1	<0.001
68.2	70.9	79.1	58.1	0.003
30.6 (5.4)	29.9 (0.5)	30 (0.6)	29.8 (0.7)	0.862
47.5	43.5	43.4	43.7	0.975
21.0	26.8	22.2	33.6	0.201
56.2	67.8	65.1	71.0	0.340
	(n = 1074) % 51.1 (9.2) 27.2 68.2 47.5 21.0	(n = 1074) (n = 281) % 51.1 (9.2) 46.6 (0.7) 27.2 25.6 68.2 70.9 30.6 (5.4) 29.9 (0.5) 47.5 43.5 21.0 26.8	(n = 1074) (n = 281) (n = 172) % % % 51.1 (9.2) 46.6 (0.7) 45.3 (1.1) 27.2 25.6 10.6 68.2 70.9 79.1 30.6 (5.4) 29.9 (0.5) 30 (0.6) 47.5 43.5 43.4 21.0 26.8 22.2	(n = 1074) % (n = 281) % (n = 172) % (n = 108) % 51.1 (9.2) 46.6 (0.7) 45.3 (1.1) 48.5 (1.6) 27.2 25.6 10.6 49.1 68.2 70.9 79.1 58.1 30.6 (5.4) 29.9 (0.5) 30 (0.6) 29.8 (0.7) 47.5 43.5 43.4 43.7 21.0 26.8 22.2 33.6

Table 2. Comparison of reproductive risk factors by country of residence and country of birth

	CAMA Mexican (n = 1074) %	NHANES Mexican-American (n = 281) %	NHANES Mexican-born (n = 172) %	NHANES U.Sborn (n = 108) %	p-valı
Reproductive risk factors					
Age at menarche (mean (sd))	12.8 (1.6)	12.7 (0.1)	13.1 (0.2)	12.3 (0.2)	0.003
Early menarche (younger than age 12)	19.9	20.1	15.3	29.3	0.05
Age at menopause ^{1*} (mean (sd))	45.9 (6.4)	45.3(0.9)	46.4 (1.4)	44.3 (0.9)	0.22
Ever pregnant	95.1	94.4	99.0	87.3	<0.00
Age at first live birth** (mean (sd))	21.2 (4.7)	21.1 (0.4)	21.3 (0.5)	20.8 (0.7)	0.61
Parity (number of live births)					
0 live births	6.1	2.0	1.9	2.3	0.762
1 - 2 live births	28.4	27.9	27.9	27.8	
3 - 4 live births	35.8	48.7	46.1	53.0	
5 + live births	29.7	21.4	24.2	16.8	
Ever breastfed**	89.6	69.7	80.4	51.8	0.01
Ever used OC	44.7	63.9	59.3	70.9	0.01
Ever used hormone therapy*	14.6	38.0	22.5	52.3	<0.001

1 Includes both naturally-occuring and surgically-induced menopaus

CONCLUSIONS

- Reproductive and lifestyle behaviors associated with increased risk of breast cancer appear to be more common among Mexican-American women than among Mexican women
- Among Mexican-American women, such behaviors are more common among U.S.born than among Mexican-born women

IMPLICATIONS

- Protective behaviors of Mexican women may be lost with migration and acculturation
- Adoption of harmful reproductive and lifestyle behaviors is likely to increase risk of breast cancer
- Future efforts might encourage women who have recently emigrated from Mexico to retain healthy behaviors associated with reduced risk of breast cancer

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^{*}Only among postmenopausal women **Only among parous women