Family History of Cancer: A Poor Indicator of Risk for Immigrant Patients?

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INTRODUCTION

•Guidelines recommend earlier and, or more frequent screening for individuals with a family history of breast, ovarian, colorectal, prostate, and skin (melanoma) cancers (Zorob, Anderson, Cefalu, & Sidani, 2001).

•A number of studies have noted that people tend to under-report family history of cancer (FHC) (Murff, Spigel, & Syngal, 2004). However, as few previous studies employed large, nationally representative samples, little is known about whether some demographic groups are more likely to under-report FHC than other groups.

•One sub-population known to face numerous barriers to healthcare, including low rates of cancer screening, is immigrants (e.g., Goel, 2003). Little is known about FHC reporting by immigrants living in the United States. To address this gap, we investigated the likelihood of reporting FHC by immigrants and non-immigrants in a nationally representative sample.

METHOD

Participants:

5,010 respondents to the 2005 Health Information Trends Survey (HINTS). The survey was administered to a nationally representative probability sample of 5,586 households with telephones.

Measures:

Independent variable: Nativity, whether a respondent was U.S. or foreign-born

Dependent variable: Self-reported family history of cancer (FHC) Respondents were asked, "Have any of your family members ever had cancer?"

Demographic control variables: race/ethnicity, sex, age, education, marital status, health care coverage

Knowledge-related control variables: whether the participant had been diagnosed with cancer her/himself, whether the participant had ever sought out information about cancer, and whether the participant has family and friends with whom he/she talks about his/her health

Data Analysis:

All analyses were weighted to produce nationally representative estimates. We tested three nested multivariate models. Model 1 contained nativity status and race/ethnicity; demographic variables were added to Model 2 and knowledge variables were added to Model 3. Analyses were performed using Stata 9.1.

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RESULTS

Table 1. Weighted Estimates of Characteristics of the U.S.-born and Foreign-born Respondents

Characteristics	n*	% Total Sample (S.E.) N = 5010	% U.S.-born (S.E.) n = 4468	% Foreign-born (S.E.) n = 542	P Value
Race					<.001
White	3987	72.9 (.97)	82.0 (9.14)	16.9 (1.96)	
Black	424	10.5 (.68)	11.4 (.76)	5.00 (1.28)	
Hispanic	484	13.6 (.78)	5.5 (.56)	63.4 (2.72)	
Asian and Pacific Islander	115	3.0 (.34)	1.1 (2.29)	14.7 (1.91)	
Mean Age		45.3 (.36)	46.1 (.40)	40.4 (.89)	<.001
% Female	3301	52.5 (1.03)	52.5 (1.10)	52.5 (1.03)	.99
Marital status					.08
% Married	2928	64.9 (1.02)	64.1 (1.09)	69.6 (2.93)	
% Previously married	1398	15.4 (.60)	16.1 (.65)	11.0 (1.56)	
% Never married	684	19.7 (1.00)	19.8 (1.07)	19.4 (2.83)	
Education					<.001
Less than high school	601	13.8 (.72)	10.2 (.66)	35.6 (2.82)	
High school	1360	30.1 (.94)	31.3 (1.01)	22.9 (2.56)	
Some college	1434	31.8 (.99)	33.8 (1.06)	19.5 (2.62)	
College	1615	24.27 (.78)	24.7 (.84)	21.9 (2.14)	
Has health care coverage	4422	83.6 (.94)	86.8 (.76)	56.7 (3.93)	<.001
Family and friends to talk to about one's health	4166	80.1 (.85)	80.3 (.91)	78.7 (2.38)	.52
Sought information about cancer in the past	2692	49.9 (1.02)	52.8 (1.08)	32.4 (2.60)	<.001
Personal history of cancer	781	11.4 (.53)	12.6 (.59)	4.2 (.92)	<.001

* unweighted n

Nativity

•76.7% of U.S.-born respondents and 42.3 % of foreign-born respondents reported a FHC.

•Even after adjusting for covariates, foreign-born respondents were almost a third as likely as U.S.-born respondents to report FHC (OR = .35; 95% CI = 0.25-0.48).

Do control variables account for the effect of nativity on reporting family history of cancer?

The nativity effect was attenuated by demographic factors, principally race/ethnicity, but not knowledge factors.

Race/Ethnicity

•Nativity accounted for much of the effect of race/ethnicity on FHC reporting. The differences in the odds of Blacks, Hispanics and Asians/Pacific Islanders reporting FHC compared to Whites was diminished by 4.1%, 100.2%, 112.2%, respectively after adding nativity to the model.

•The adjusted effect of nativity on FHC reporting was significant for all categories of race/ethnicity. Odds ratios for the four groups were: White = 0.58 (0.35-0.96), Black = 0.14 (0.04-0.47), Hispanic = 0.26 (0.14-0.47), and Asian/Pacific Islander = 0.10 (0.02-0.40).

Acculturation and Reporting Family History of Cancer

None of the indicators of acculturation (comfort with English, years in the U.S., and health care coverage) were significantly associated with FHC reporting by foreign-born respondents.

Table 2. Odds Ratios (OR) for Reporting Family History of Cancer

Characteristic	Unadjusted OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
Foreign-born†	0.22 (0.17-0.28) ***	0.32 (0.23-0.44) ***	0.35 (0.25-0.49) ***	0.36 (0.25-0.48) ***
Race				
Black	0.69 (0.51-0.94)*	0.72 (0.53-0.98)*	0.79 (0.58-1.08)	0.82 (0.59-1.12)
Hispanic	0.27 (0.21-0.36)**	0.55 (0.39-0.76) ***	0.63 (0.44-0.89)*	0.71 (0.50-1.01)
Asian and Pacific Islander	0.32 (0.20-0.50) ***	0.67 (0.39-1.13)	0.59 (0.34-1.01)	0.57 (0.33-0.98)*
Age	1.01 (1.00-1.01)**		1.00 (0.99-1.00)	1.00 (0.99-1.00)
Sex	1.35 (1.13-1.61)**		1.37 (1.14-1.64) ***	1.20 (1.00-1.45)*
Marital status				
Previously married	0.84 (0.68-1.04)		0.73 (0.58-0.91)**	0.79 (0.62-0.99)*
Never married	0.67 (0.52-0.88)**		0.69 (0.53-0.91)**	0.72 (0.55-0.94)*
Education				
High school	1.96 (1.48-2.60) ***		1.23 (0.91-1.66)	1.10 (0.81-1.50)
Some college	2.29 (1.71-3.07) ***		1.37 (1.00-1.87)	1.10 (0.80-1.52)
College	2.03 (1.54-2.67) ***		1.14 (0.83-1.56)	0.85 (0.61-1.18)
Has health care coverage	2.51 (1.96-3.22) ***		1.57 (1.19-2.08)**	1.47 (1.10-1.95)**
Family and friends to talk to about one's health	1.59 (1.28-1.99) ***			1.27 (1.00-1.60)*
Sought information about cancer in the past	1.65 (1.40-1.95) ***			2.41 (1.99-2.92) ***
Personal history of cancer	1.21(0.96-1.45)			0.79 (0.61-1.02)

*P < .05; **P < .01; ***P < .001; †Referent groups were U.S.-born, White, Male, Married, Less than high school, No healthcare coverage, Does not talk to family and friends, Did not seek cancer information, No personal history of cancer

DISCUSSION

•Foreign-born respondents were about a third as likely to report FHC as U.S.-born respondents.

•Previous research has reported race/ethnicity differences in reporting FHC (Pinsky et al., 2003; Ramsey et al., 2006). We found similar differences but they could be accounted for by nativity and other demographic variables.

What Might Account for the Association between Nativity and FHC reporting?

For immigrants from developing countries, the effects of nativity may be due to lower reported incidence of cancer in their countries of origin (Parkin, Whelan , Ferlay, & Storm, 2005). Lower rates of cancer in developing countries have been attributed to younger age structures, different behavioral and environmental exposures (Jones et al., 2006), and under-diagnosing / under-reporting cancers (Rastogi, Hildesheim, & Sinha, 2004). All three factors may belie genetic propensities for cancer that will emerge once families are established in the United States and are exposed to the same risk factors and surveillance system as U.S.-born individuals.

CONCLUSION

Self-reported FHC may be a poor indicator of genetic risk among immigrant patients. Failing to take this into account could result in systematically under-providing secondary cancer prevention to immigrant patients, and contributing to existing disparities in cancer screening and use of genetic testing (Armstrong et al., 2005; Goel et al., 2003).