Published in final edited form as:

Am J Prev Med. 2009 July ; 37(1): 64–67. doi:10.1016/j.amepre.2009.03.007.

Race/Ethnicity and the Perception of the Risk of Developing Prostate Cancer

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Abstract

Background—Although the higher risk of prostate cancer for African-American men is well known in the medical community, it is not clear how prevalent this knowledge is among African-American men themselves. Both the side effects of treatment and the lack of a demonstrated mortality benefit of routine screening with the prostate-specific antigen test among men in the general population have increased the focus on patient participation in decision making about prostate cancer screening.

Methods—Data on 1075 male respondents to the 2003 Health Information National Trends Study were collected from October 2002 to April 2003 and analyzed in 2008 to examine the associations among race/ethnicity, demographic characteristics, and the perception of the risk of developing prostate cancer for African-American, Hispanic, and non-Hispanic white men aged 45 years without a history of prostate cancer.

Results—Nearly 50% of African-American men, 47.4% of Hispanic men, and 43.3% of non-Hispanic white men perceived their likelihood of getting prostate cancer as somewhat or very low. Nearly 18% of African-American men, 21.6% of Hispanic men, and 12.9% of non-Hispanic white men perceived themselves to be more likely to get prostate cancer than the average man of the same age.

Conclusions—Despite statistics to the contrary, few African-American men perceived themselves to have a higher-than-average risk of prostate cancer, while a higher percentage of Hispanic men perceived their risk to be higher than that of the average man of the same age. These findings suggest that all men, but particularly African-American and Hispanic men, could benefit from information regarding their specific risk of developing prostate cancer before making a decision about prostate cancer screening.

Introduction

African-American men aged 40 years, and at each 5-year age interval from 45 to 90 years, have a higher lifetime risk of developing and dying from prostate cancer than non-Hispanic white men overall.¹ Although this higher risk for African-American men is well known in the medical community, it is not clear how prevalent this knowledge is among African-

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No financial disclosures were reported by the authors of this paper.

American men themselves. It is also not clear whether men in general incorporate race/ethnicity-specific risk information into their assessments of their personal risk for prostate cancer. Surveys conducted in the early 1990s show that only 5% of African-American men surveyed in Chicago² were aware of African-American men's increased risk of developing prostate cancer; of African-American men surveyed in New York,³ only 7% perceived themselves to be at high risk, 16% perceived themselves to have no risk, and 34% did not know their risk. Further, little is known about Hispanic men's perception of their prostate cancer risk.

Over the last decade, the considerable publicity and debate on the risks and benefits of screening with the prostate-specific antigen (PSA) test would have been expected to increase knowledge of prostate cancer risk among the general population. Variations in screening recommendations⁴⁻⁸ and an increased interest in patient involvement in decision making about prostate cancer screening make it imperative that men be knowledgeable enough to accurately weigh their specific risks and potential benefit from PSA testing. Data were analyzed from a national population-based survey to examine how African-American men, Hispanic men, and non-Hispanic white men perceive their risk of developing prostate cancer and to assess what implications this might have for screening education programs.

Methods

Data for this study were obtained from the 2003 Health Information National Trends Survey (HINTS); they were collected from October 2002 to April 2003 and analyzed in 2008.⁹ HINTS is designed to monitor nationwide changes in health communication. Random-digit-dialing sampling was used to obtain a nationally representative sample of households; one adult from each household was recruited to complete a computer-assisted telephone interview. More detailed information on HINTS can be accessed at hints.cancer.gov/.

Men included in this analysis were aged ≥ 45 years; self-identified as African American, Hispanic, or non-Hispanic white; and were without a history of prostate cancer. There was no significant difference by race/ethnicity in the percentage of men excluded because of a history of prostate cancer or because of missing data.

The perception of the risk of developing prostate cancer in the future was ascertained from answers to these questions:

1. How likely do you think it is that you will develop prostate cancer in the future? Would you say your chance of getting prostate cancer is very low, somewhat low, moderate, somewhat high, or very high? and
2. Compared to the average man your age, would you say that you are more likely to get prostate cancer, less likely, or about as likely?

All data were analyzed with SUDAAN release 9.0.1. The HINTS data set is weighted to account for the sampling of households and the sampling of adults within households. Detailed information on the computation of these weights is available at hints.cancer.gov/docs/HINTS_2003_final_report.pdf. Proportions and the chi-square test for homogeneity of proportions were used to examine differences in the distribution of categorical variables and the significance of differences, respectively ($\alpha = 0.05$). Unweighted sample sizes and weighted percents are presented.

Multivariate logistic regression analyses were used to examine the association between demographic characteristics and (1) the perception of the future likelihood of developing prostate cancer (low/moderate) and (2) the perception of the risk of developing prostate cancer compared to the average man of the same age (more likely/less or about as likely).

Results

Non-Hispanic white men constituted 82.2% of 1075 men included in this analysis, while African-American and Hispanic men each constituted 8%. A significantly higher percentage of African-American and Hispanic men had incomes <\$35,000 and educational achievement levels of less than a high school education. Hispanic respondents also more frequently did not have health insurance and more frequently were married or living with a partner. There were no significant differences in race/ethnicity in the age distribution.

Nearly 50% of African-American men, 47.4% of Hispanic men, and 43.3% of non-Hispanic white men perceived their future risk of developing prostate cancer as somewhat or very low (Table 1). When compared to white race/ethnicity in a multivariate logistic regression model, Hispanic ethnicity was associated significantly with the perception of a somewhat or very high future risk of developing prostate cancer (OR = 2.0; 95% CI = 1.02, 3.90) after adjustment for age, marital status, income, education, and health insurance, but African-American race/ethnicity was not (OR = 1.03; 95% CI = 0.46, 2.28).

In unadjusted analyses, Hispanic men (21.6%) also more frequently than African-American (17.5%) and non-Hispanic white men (12.9%) perceived that they were more likely than the average man of the same age to develop prostate cancer. In a multivariate model, however, race/ethnicity was not associated significantly with the perception of a higher risk of developing prostate cancer than the average man of the same age (Table 2). Men with incomes of \$35,000 to \$75,000 (OR = 1.87; 95% CI = 1.02, 3.45) or with less than a high school education (OR = 2.35; 95% CI = 1.02, 5.40) were more likely to perceive a higher risk of developing prostate cancer compared to the average man of the same age.

Discussion

Despite statistics showing a higher risk of prostate cancer among African-American men compared to men of other races/ethnicities, only 17.5% of African-American men perceived their risk of developing prostate cancer to be higher than that of the average man their age. In contrast, Hispanic men more frequently perceived themselves to have a higher-than-average risk of developing prostate cancer, a perception not supported by available literature.¹⁰ Inconsistencies between the perceived and actual risk of developing cancer have been reported by others.^{2,3,11–13} To our knowledge, the current study is the only national population-based study that examines variation in race/ethnicity in the perception of prostate cancer risk among men not suspected to have prostate cancer, and the only study that also includes data on the perception of prostate cancer risk among Hispanic men.

Several observational research studies^{14–16} have demonstrated an association between risk perception and health behavior. Truly informed decision making for all men, therefore, must include an accurate assessment of personal risk as well as the potential benefit and risk of screening, early detection, and treatment. These results also highlight the importance for minority men to be made aware of their personal risk of developing prostate cancer and to understand how that compares with the majority population on whom most screening recommendations are based.

Study Limitations

It was not possible to assess what personal risks other than demographics might have factored into men's perception of their overall risk of developing prostate cancer in the future, how that might have differed by race/ethnicity, or how that also might have influenced perception of a higher-than-average risk. While age and family history may have contributed to men's perception of the overall risk of developing prostate cancer, these

factors should have had less impact on the perception of comparative risk of developing prostate cancer, as the latter was conditional only on the average risk of a man of the same age. The small sample size of African-American and Hispanic men also should be considered in the interpretation of these findings.

Conclusion

Despite statistics to the contrary, few African-American men perceive themselves to have a higher-than-average risk of prostate cancer, while a higher percentage of Hispanic men perceive their risk to be higher than that of the average man of the same age. All men, but particularly African-American and Hispanic men, could benefit from information regarding their specific risk of developing prostate cancer before making a decision about prostate cancer screening.

Acknowledgments

The authors thank William Waldron of Information Management Systems, Inc., for his assistance with the data analysis. They also thank Rachel Ballard-Barbash, MD, MPH, and Martin Brown, PhD, for their review of the manuscript for National Cancer Institute publication clearance.

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Perception of the risk of developing prostate cancer among men aged 45 years by race/ethnicity, 2003 Health Information National Trends Survey

Table 1

Beliefs about prostate cancer	Total sample n = 1075	African American n = 105	Hispanic n = 86	Non-Hispanic white n = 884	p-value
Likelihood of developing prostate cancer in the future					0.122
Very low	21.5	24.9	28.6	20.5	
Somewhat low	22.6	24.6	18.8	22.8	
Moderate	37.3	28.0	25.1	39.5	
Somewhat high	10.6	9.5	19.3	9.9	
Very high	5.0	8.2	5.4	4.6	
Refused/don't know	3.0	4.9	2.8	2.8	
Likelihood of developing prostate cancer compared to average man of same age					0.092
More likely	14.0	17.5	21.6	12.9	
Less likely	34.4	34.3	20.4	35.7	
About as likely	47.6	41.3	52.8	47.8	
Refused/don't know	4.1	7.0	5.2	3.6	

* Unweighted sample sizes and weighted proportions

Table 2

Multivariate analysis of the perception of the risk of developing prostate cancer, 2003 Health Information National Trends Survey

	Perception of a somewhat to very high likelihood of developing prostate cancer in the future	Perception of a higher risk of developing prostate cancer than average man of same age
	OR (95% CI)	OR (95% CI)
Race/ethnicity		
African American	1.03 (0.46, 2.28)	1.18 (0.47, 2.99)
Hispanic (any race)	2.00 (1.02, 3.90)	1.09 (0.47, 2.57)
Non-Hispanic white (ref)	1.0	1.0
Age (years)		
45–50 (ref)	1.0	1.0
51–65	1.0 (0.63, 1.58)	1.23 (0.62, 2.47)
>65	1.24 (0.69, 2.22)	1.58 (0.65, 3.85)
Marital status		
Married/living with partner (ref)	1.0	1.0
Never been married	1.24 (0.41, 3.72)	1.31 (0.49, 3.50)
Divorced/widowed/separated	1.29 (0.74, 2.27)	0.70 (0.36, 1.37)
Income (\$)		
<35,000	0.70 (0.39, 1.23)	1.79 (0.79, 4.03)
35,000–75,000	1.20 (0.72, 2.01)	1.87 (1.02, 3.45)
75,000	1.0	1.0
Education		
<High school	1.04 (0.50, 2.18)	2.35 (1.02, 5.40)
High school graduate	0.71 (0.42, 1.20)	1.15 (0.66, 2.01)
Some college	0.50 (0.28, 0.91)	0.65 (0.34, 1.24)
College graduate (ref)	1.0	1.0
Have health insurance coverage		
Yes (ref)	1.0	1.0
No	1.27 (0.57, 2.81)	1.17 (0.52, 2.65)