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Barriers and Facilitators to Digital Rectal Examination Screening among African-American and Afro-Caribbean Men

Daniel J Lee^{†,*}, Nathan S Consedine[‡], and Benjamin A Spencer[†]

[†] Department of Urology, Columbia University, College of Physicians and Surgeons, New York, NY [‡] Department of Psychological Medicine, University of Auckland, Auckland, New Zealand

Abstract

Objective—To examine the effect of race/ethnicity and fear characteristics on the initiation and maintenance of DRE screening.

Methods—533 men from Brooklyn, NY, aged 45–70, were classified into four race/ethnic groups: US-born whites, US-born African-American, Jamaican, and Trinidadian/Tobagonian. Participants recorded the number of DRE's in the past 10 years. Demographics and structural variables, as well as prostate cancer worry and screening fear were measured with validated tools.

Results—Overall, 30% of subjects reported never having a DRE and 24% reported annual DRE's. African-American, Jamaican, and Trinidadian/Tobagonian men have higher prostate cancer worry and screening fear scores than white men (all $p < 0.05$). African-American, Jamaican, and Trinidadian/Tobagonian men were less likely to maintain annual DRE's than white males (ORs = 0.17, 0.26, and 0.16, respectively, all $p < 0.05$). Men with low screening fear were more likely to have an initial DRE (OR=2.3, $p < 0.05$ vs. high screening fear), but no more or less likely to have annual DRE's. Having a regular physician, comprehensive physician discussion, and annual visits were also associated with undergoing DRE.

Conclusion—We identified several ethnically-varying barriers and facilitators to DRE screening. African-American and Afro-Caribbean men undergo DRE less often and have higher prostate cancer worry and screening fear scores than white men. Screening fear predicts the likelihood of undergoing an initial, but not annual, DRE screen. Access to a physician and annual visits facilitate DRE screening. Interventions that include both culturally-sensitive education and patient navigation, and consider whether patients should be initiating or maintaining screening, may facilitate guideline-consistent screening.

Keywords

digital rectal examination; African-American; Caribbean; race; screening; prostate cancer; screening fear

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*Corresponding author: Daniel Lee Address: Herbert Irving Cancer Center, 161 Fort Washington Avenue, New York, NY 10032; Telephone: 212-305-6665; Fax: 212-305-6813; Daniel.Lee@hsc.stonybrook.edu.

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Introduction

African-American men face a disproportionately high burden of prostate cancer; they have 60% higher incidence and two-fold higher mortality than American-born whites.¹ Caribbean men of African descent have among the highest incidences of prostate cancer in the world. In Jamaica, prostate cancer incidence rates may be as high as 304 per 100,000 men, compared to 272 per 100,000 among African-American men in the U.S.^{2, 3} In Tobago, the incidence rate among men aged 50–79 years was found to be 15.1%.^{4, 5}

Several factors have been suggested to account for disparities in prostate cancer incidence and mortality,^{6–9} and differences in screening practices may also contribute. With the results of the European Randomized Study of Screening for Prostate Cancer and the Prostate, Lung, Colorectal and Ovarian Cancer Screening Trial,^{10, 11} the American Urological Association recommended that men 40 years and older with a life expectancy of at least 10 years be offered an initial digital rectal examination (DRE) and PSA test to establish a baseline, with the decision to proceed to biopsy determined after consideration of all the patient's individual risk factors.¹² DRE's remain an important factor in the assessment of prostate cancer risk and are independently predictive of prostate cancer.^{13, 14} A few data suggest that African-American and Afro-Caribbean men are less likely to undergo DRE screening than white men, even after adjusting for socioeconomic status, access to care and comorbidities.^{15–18}

Low prostate cancer screening has been associated with lower socioeconomic status, lack of insurance, less prostate cancer knowledge, and weaker physician recommendation.^{19–22} Fear and anxiety related to prostate cancer and the screening process may also represent key barriers that are potentially modifiable. While men may undergo screening as a result of their decreased cancer worry, they may also avoid screening to avoid an unfavorable diagnosis or because of fear or embarrassment regarding the test itself, especially with DRE.²³

Little is known about prostate screening over time, much less among African-American or Afro-Caribbean communities. It is unclear whether the low screening rates in these high-risk populations exist because men never to get an initial screening or because they fail to maintain screening patterns over time; most other studies analyze screening as a single time point. The current report examines barriers to the initiation and maintenance of DRE screening among African-American and Afro-Caribbean men, paying particular attention to the possible influence of screening fear and prostate cancer worry on DRE screening initiation and maintenance.

Methods

Five-hundred and thirty-three men living in Brooklyn, NY aged 45 – 70 participated in the study. We utilized stratified cluster sampling. We identified census tracts containing at least 25% black or white males according to the 2000 Census files, stratified them according to household income, and ordered them within income category by percentage of black and white residents. Geographically-representative numbers of black and white men in each tract were selected and trained interviewers recruited men who met the study criteria for a “Men's Health Questionnaire Study.”

Procedures

Approval for this study was obtained from the Institutional Review Boards of Columbia University and Long Island University. Data were collected from 2004 to 2006. After

written consent was obtained, face-to-face interviews were conducted. Participants were paid \$50 to cover time and travel expenses.

Measures

Background variables and questionnaire—Background variables included age, race/ethnicity, relationship status, income, and education. Age, income, and education were stratified into five categories (see Table 1). For the regression models, age was analyzed as a continuous variable. The four race/ethnic groups were US-born Caucasian, US-born African-American, Jamaican, and Trinidadian/Tobagonian. Relationship status was modeled as a dichotomous variable: married/stable relationship versus single/divorced/widowed.

Health insurance status and health care system barriers—Health insurance status was categorized as “no insurance,” “Medicare,” “Medicaid,” or “private.” Participants completed a six-item scale assessing barriers to the use of the health care system, with their scores aggregated to form a perceived barriers measure and then analyzed as a binary variable of high vs. low health care system barriers on the basis of a median split ($\alpha = 0.66$). The six questions were as follows: 1. “the health care system was not designed to be conveniently used by people like me,” 2. “I feel that I need assistance with accessing or making appointments for health care,” 3. “I don’t think that it is difficult to get reliable and professional medical care,” 4. “I have no problem dealing with the health care system,” 5. “I feel that finding a doctor is too hard for me,” 6. “I have no confidence in my ability to successfully use the health care system – either for screening or treatment processes.”

Clinical variables—Participants reported clinical information and whether they had a regular physician, a discussion with their physician regarding prostate cancer, a positive family history of prostate cancer, or an annual physical examination. They were asked whether their physician had ever recommended prostate cancer screening and discussed their family history of prostate cancer or risk of prostate cancer. In the logistic regression model, these last three items were summed to create an aggregate measure ($\alpha=0.80$) and analyzed as a binary variable of “comprehensive physician discussion” versus “non-comprehensive physician discussion.”

Prostate cancer knowledge—A prostate knowledge questionnaire was developed based on prior work and expanded in consultation with expert oncologists and urologists.¹⁷ The score consisted of 50 items evaluated by experts as belonging to six categories of prostate cancer knowledge: anatomy, screening, risk factors, warning signs, treatment, and general knowledge. These items were summed and analyzed as a binary variable of high prostate cancer knowledge versus low knowledge in the multivariate predictive models.

Prostate cancer screening—Participants recorded the number of DRE and PSA tests they had undergone in the past 10 years. The two screening modalities are being evaluated separately, and the results with PSA testing were previously published.¹⁹ By combining these data together with the age at which guidelines suggested they should initiate screening (varies ethnically), participants were categorized as: annual, less than annual, and never screeners.

Prostate cancer worry and fear of screening—Two different sources of fear were analyzed: fear of screening and prostate cancer worry. Fear of screening was evaluated with a five-item scale with participants answering questions like “I worry that screening procedures will hurt me somehow” and “I am afraid of prostate cancer screening” ($\alpha=0.79$). Prostate cancer worry was evaluated with a five-item scale ($\alpha=0.65$) which was developed

from prior work on breast cancer worry among African Americans.²⁴ Responses to the prostate cancer worry and screening fear scales were each dichotomized as high/low.

Statistical analysis—We used simple proportions with Chi-square significance testing to describe the sample. Multivariate ANOVA was used to evaluate differences in fear-related variables between racial/ethnic groups (see Table 3a) and between different DRE screening categories (see Table 3b). Logistic and multinomial regressions were used to model predictors of DRE screening practices (see Table 4). An initial binomial logistic regression was used to compare men who had never had a DRE with those who reported at least one DRE in the past ten years (“ever”). Because of our interest in the variables differentiating initiation versus maintenance profiles, we performed two multinomial regressions to distinguish 1) those who never had DRE screening from those who have DRE screening less than annually (initiation), and 2) less-than-annual screeners from annual screeners (maintenance). The first multinomial regression defined men who had never had a DRE as the referent group, represented in two different comparisons: Comparison 1 (ever vs. never) and Comparison 2 (less than annual vs. never). The second multinomial model defined less-than-annual screeners as the referent and is represented as Comparison 3 (annual vs. less than annual). Both multinomial models were designed with odds ratios greater than one representing more favorable outcomes.

Results

Table 1 presents the demographic characteristics of the 533 participants in our study. The average age of the cohort was 54.5 ± 7.5 years. By design, there was nearly equal representation among the four race/ethnic groups. Sixty-six percent of the men had a high-school education or less, with a median annual income between \$30,000 and \$49,999. More than 80% of the men had some type of medical insurance, a personal physician, and annual examinations.

Overall, 30% of the men never had a DRE. Compared to those who have had a DRE, men who never had a DRE were less likely to have a regular physician (8% vs. 39%), insurance (7.3% vs. 24%), and less likely to have had a discussion with their physician about their family history of prostate cancer, personal risk for developing prostate cancer, and recommendations for screening (all $p < 0.01$). Two-thirds of the men who never had a DRE had a high health care barriers score, compared to 40.7% of those who have had a DRE ($p < 0.01$).

DRE Testing Frequency

Overall, 31% of the men reported never having had a DRE (see Table 2). White males were almost twice as likely to have annual DRE (35.5%) than African-Americans (16.9%). Men from Trinidad/Tobago had the lowest total number of DRE (2.0) screenings in the ten-year period. A subset analysis was performed to evaluate the contingency variables for the relation between DRE and PSA screening. Overall, between 57–71% of the men within each ethnic group reported having both DRE and PSA screening together. African-Americans were more likely to report only DRE's than the other ethnic groups.

Ethnic Differences in Prostate Cancer Worry and Screening Fear

African-Americans reported the highest screening fear scores (2.04) among the four groups ($p < 0.05$, see Table 3a). African-American, Jamaican, and Trinidadian/Tobagonian men had significantly higher levels of prostate cancer worry (2.43, 2.40, 2.47, respectively) than white males (2.21, $p < 0.05$). Fear of screening scores were also higher for African-American,

Jamaican, and Trinidadian/Tobagonian men (2.04, 1.97, 1.92, respectively) than white males (1.63, $p<0.01$).

Differences in Prostate Cancer Worry and Screening Fear According to DRE Screening Behavior

Men who never had a DRE had significantly higher fear of prostate screening scores (2.21) than those who had annual (1.64, $p<0.05$) and less than annual (1.82, $p<0.05$, see Table 3b) DRE. Prostate cancer worry scores were higher for men who never had a DRE (2.53) than those who had less than annual (2.32) or annual (2.30, $p<0.05$) exams.

Predicting DRE Screening Behavior

Relative to those who never had a DRE (Comparison 1 or Standard Model), men were less likely to have ever had a DRE if they did not have a regular physician (OR=0.33, 95% CI: 0.17–0.64), did not have an annual examination (OR=0.45, 95% CI: 0.25–0.82), and did not have a comprehensive discussion with their physician (OR=0.38, 95% CI: 0.23–0.62, see Table 4). Those with low screening fear were more likely ever to have had a DRE than those with high screening fear (OR=2.7, 95% CI: 1.5–4.8).

The Initiation model (Comparison 2) compared the odds of having less-than-annual DRE screenings to never having had a DRE. African-American (OR=3.7, 95% CI: 1.73–8.1), Jamaican (OR=5.4, 95% CI: 2.4–12.4), and Trinidadian/Tobagonian males (OR=6.3, 95% CI: 2.8–14.4) were more likely to have DRE screenings less than annually compared to white males. Men without a regular physician (OR=0.35, 95% CI: 0.17–0.70) and those who reported a non-comprehensive physician discussion (OR=0.39, 95% CI: 0.23–0.66) were less likely to be in the less than annual DRE group than the never screened group. Those with low screening fear (OR=2.35, 95% CI: 1.29–4.28) had more than 2 times the odds of having less than annual DRE screenings than never having a DRE.

In the Maintenance model (Comparison 3), we evaluated the odds of having annual DRE's to having less-than-annual DRE's. Each additional year of age was associated with a 15% decrease in the odds of maintaining annual DRE (OR=0.85, 95% CI: 0.81–0.89). African-American (OR=0.17, 95% CI: 0.07–0.37), Jamaican (OR=0.26, 95% CI: 0.12–0.57), and Trinidadian/Tobagonian males (OR=0.16, 95% CI: 0.07–0.36) were less likely to maintain annual DRE screenings than white males. Men who did not have annual physical examinations were also less likely to have annual DRE screenings (OR=0.30, 95% CI: 0.11–0.80).

Discussion

No prior study has evaluated the effect of fear on the initiation and continuity of DRE's among Afro-Caribbean sub-populations. After controlling for ethnicity and other demographic factors, men with low screening fear had 2.4 times the odds of initiating a DRE screening (versus not screening) compared to those with high screening fear. However, once high screening fear men had undergone at least one DRE, they were just as likely to maintain annual DRE's as those with low screening fear. Prior work by Consedine et al^{17, 25} found that fear of screening, especially embarrassment and discomfort regarding DRE's, is a significant barrier to prostate cancer screening, while prostate cancer worry is a facilitator to screening. Concern and worry may follow a bimodal distribution: moderate levels may promote health behaviors, while high levels promote denial and avoidance.^{17, 26} Importantly, these fear and worry characteristics varied across the ethnic groups. Overall, African-American and Afro-Caribbean men had significantly higher prostate cancer worry and screening fear than the white males. Trinidadian/Tobagonian men had the highest

prostate cancer worry levels, while African-American men had the highest screening fear levels. These findings are consistent with other studies suggesting that men from minority populations have high levels of worry about prostate cancer and are particularly averse to DRE testing.^{17, 27, 28} DRE's have unique psychological demands for men which may be intensified given the similarities between the test itself and the disease for which it is screening regarding issues of vulnerability, humiliation, and sexuality.^{7, 17}

Another important finding of the study is the importance of ethnicity in DRE screening behavior. African-American, Jamaican, and Trinidadian/Tobagonian men had significantly fewer DRE screenings than white males, confirming the findings of several other studies.^{15, 17, 18} African-American and Afro-Caribbean men were between 74% and 84% less likely to maintain annual DRE screenings, similar to the PSA screening behavior that Gonzalez et al¹⁹ found in the same study cohort. PSA testing is often done in conjunction with DRE screenings, however PSA screening does not share the same complex relations with fear and anxiety as DRE screening.¹⁷ Men from these three specific sub-populations reported similar trends in prostate cancer screening, prostate cancer worry and screening fear; however, the appropriate clinical intervention to address these fears may be very different for each culture. Hispanic, African-American, and Caribbean communities exhibit diversity in cultural and healthcare practices.¹⁷ Therefore, more research is necessary to clarify the risk-profiles of each community and the best means to address the existent disparities in care.

Finally, this study suggests that physician-patient interactions may be more influential in facilitating the initiation of DRE screening versus engendering a maintenance pattern. Prior studies found that those who did not have a consistent source of health care had lower screening rates.^{18, 29} In this cohort, men who lacked a regular physician or comprehensive discussions about prostate cancer were 65% and 61% less likely to initiate DRE screening, respectively, but had equivalent odds of maintaining annual DRE's.

There are several limitations to our study. The self-reported outcomes referenced a period of ten years and are therefore subject to recall bias. Because the data are cross-sectional, the results may show correlations but do not reveal causality. Finally, the participants were all men living in Brooklyn, New York and therefore the findings may not apply to all Afro-Caribbean and African-American populations in the United States.

Conclusions

Despite major advances in prostate cancer detection and treatment, there remains a large disparity in screening utilization rates among men at higher risk of dying from prostate cancer. Several ethnically-varying barriers and facilitators to DRE screening were characterized in this study. African-American and Afro-Caribbean men undergo DRE less often and have higher prostate cancer worry and screening fear scores than white men. Screening fear predicts the likelihood of undergoing an initial, but not annual, DRE screen. Access to a physician and annual visits facilitate DRE screening. Interventions that include both culturally-sensitive education and patient navigation, and consider whether patients should be initiating or maintaining screening, may facilitate guideline-consistent screening.

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Table 1

Characteristics of the sample

Characteristic	Never had DRE (%)	Has had DRE (%)	p- value
Age	(n=162)	(n=371)	
45–49	71 (43.8)	127 (34.2)	.01
50–54	34 (21)	59 (15.9)	
55–59	25 (15.4)	75 (20.2)	
60–64	21 (13)	48 (12.9)	
65–70	11 (6.8)	62 (16.7)	
Race/Ethnicity			
US-born Caucasian	36 (22.2)	85 (22.9)	n.s.
US-born African-American	47 (29)	95 (25.6)	
Jamaican	40 (24.7)	107 (28.8)	
Trinidadian/Tobagonian	39 (24.1)	84 (22.6)	
Relationship status			
Married/stable	86 (53.1)	203 (54.7)	n.s.
Single/divorced/widowed	76 (46.9)	168 (45.3)	
Household income			
\$0–\$14,999	36 (22.2)	48 (12.9)	.05
\$15,000–\$29,999	45 (27.8)	106 (28.6)	
\$30,000 to \$44,999	33 (20.4)	114 (30.7)	
\$45,000–\$59,999	31 (19.1)	59 (15.9)	
>\$60,000	17 (10.5)	44 (11.9)	
Education			
Less than High School	46 (28.4)	63 (17)	.001
High School	73 (45.1)	168 (45.3)	
Community college	20 (12.3)	68 (18.3)	
Bachelor's degree	21 (13)	42 (11.3)	
Graduate degree	2 (1.2)	30 (8.1)	
Insurance			
None	39 (24.1)	27 (7.3)	.001
Medicaid	31 (19.1)	68 (18.3)	
Medicare	9 (5.6)	47 (12.7)	
Private	83 (51.2)	229 (61.7)	
Family history			
No family history	136 (84)	285 (76.8)	.06
Positive family history	26 (16)	86 (23.2)	
Personal physician			
No	63 (38.9)	29 (7.8)	.001
Yes	99 (61.1)	342 (92.2)	
Annual physical exam			
No	64 (39.5)	40 (10.8)	.001

Characteristic	Never had DRE (%)	Has had DRE (%)	p- value
Yes	98 (60.5)	331 (89.2)	
Physician discussion regarding:			
Family history			
No	112 (69.1)	115 (31)	.001
Yes	50 (30.9)	256 (69)	
Personal risk			
No	107 (66)	103 (27.8)	.001
Yes	55 (34)	268 (72.2)	
Screening recommendation			
No	78 (48.1)	55 (14.8)	.001
Yes	84 (51.9)	316 (85.2)	
Health care system barriers			
Low	54 (33.3)	220 (59.3)	.001
High	108 (66.7)	151 (40.7)	

Table 2
Ten year total and frequency of DRE tests by race/ethnicity, with contingency variables for the relation between DRE and PSA

	Caucasian				African American				Jamaican				Trinidadian/Tobagonian				Total	p-value							
	Count	Expected count	% within ethnicity	% within contingency variable	Count	Expected count	% within ethnicity	% within contingency variable	Count	Expected count	% within ethnicity	% within contingency variable	Count	Expected count	% within ethnicity	% within contingency variable									
DRE frequency	#DRE total																1.99	2.92	.001						
	% Never																31.7	30.4	.05						
	% Less than Annual																48.8	45.2							
	% Annual																19.5	24.4							
Contingency variable for relation between DRE and PSA	Caucasian																Trinidadian/Tobagonian				Total	p-value			
	Caucasian				African American				Jamaican				Trinidadian/Tobagonian				Total								
	Count	Expected count	% within ethnicity	% within contingency variable	Count	Expected count	% within ethnicity	% within contingency variable	Count	Expected count	% within ethnicity	% within contingency variable	Count	Expected count	% within ethnicity	% within contingency variable									
	24	26.6	19.8%	20.5%	4.5%	32	31.2	22.5%	27.4%	6.0%	34	32.3	23.1%	29.1%	6.4%	27	27.0	22.0%	23.1%	5.1%	117		117	22.0%	100%
	6	6.4	5.0%	21.4%	1.1%	14	7.5	9.9%	50.0%	2.6%	3	7.7	2.0%	10.7%	0.6%	5	6.5	4.1%	17.9%	0.9%	28		28	5.3%	100%
	12	10.2	9.9%	26.7%	2.3%	15	12	10.6%	33.3%	2.8%	6	12.4	4.1%	13.3%	1.1%	12	10.4	9.8%	26.7%	2.3%	45		45	8.4%	100%
	79	77.9	65.3%	23.0%	14.8%	81	91.4	57.0%	23.6%	15.2%	104	94.6	70.7%	30.3%	19.5%	79	79.2	64.2%	23.0%	14.8%	343		343	64.4%	100%
	121	121	100%	22.7%	22.7%	142	142	100%	26.6%	26.6%	147	147	100%	27.6%	27.6%	123	123	100%	23.1%	23.1%	533		533	100%	100%

Table 3
Fear characteristic scores by ethnicity (a) and frequency of DRE screening (b) (Mean +/- S.D.)

<i>Characteristic</i>	<i>Ethnic group (A)</i>			<i>MANOVA (p-value)</i>
	<i>Caucasian</i>	<i>African American</i>	<i>Jamaican</i>	
Prostate cancer worry	2.21 ± 0.68	2.43 ± .85	2.40± 0.76	.05
Screening fear	1.63 ± 0.66	2.04 ± 0.90	1.97 ± 0.83	.001

<i>Characteristic</i>	<i>DRE Categorization (B)</i>		<i>MANOVA (p-value)</i>
	<i>Never had DRE</i>	<i>Less than annual DRE</i>	
Prostate cancer worry	2.53 (.80)	2.32 (.77)	.05
Screening fear	2.21 (.83)	1.82 (.80)	.001

Table 4

Multivariate predictors of DRE categorization

Characteristic	Standard Model		Initiation Model		Maintenance Model	
	Ever vs. Never Comparison	Less Than Annual vs. Never	Annual vs. Less than Annual	Annual vs. Less than Annual	Annual vs. Less than Annual	Annual vs. Less than Annual
	Odds ratio	95% CI	Odds ratio	95% CI	Odds ratio	95% CI
Age						
	1.06*	1.02–1.10	1.11*	1.07–1.15	0.85*	0.81–0.89
Race/Ethnicity						
African-American	1.90	0.95–3.78	3.74*	1.73–8.12	0.17*	0.07–0.37
Jamaican	3.05*	1.46–6.35	5.40*	2.36–12.35	0.26*	0.12–0.57
Trinidad/Tobago	3.04*	1.46–6.32	6.31*	2.75–14.44	0.16*	0.07–0.36
Caucasian	1.00		1.00		1.00	
Relationship						
Single/divorced/widowed	1.00	0.63–1.59	1.03	0.63–1.69	0.88	0.53–1.46
Married/In Relationship	1.00		1.00		1.00	
Household income						
Lower income	0.69	0.40–1.19	0.73	0.41–1.30	0.84	0.45–1.54
Higher income	1.00		1.00		1.00	
Education						
HS or less	0.80	0.49–1.31	0.75	0.44–1.28	1.04	0.60–1.81
Greater than HS	1.00		1.00		1.00	
Insurance						
None	0.66	0.31–1.43	0.78	0.36–1.73	0.39	0.12–1.32
Medicaid	1.28	0.65–2.52	1.37	0.66–2.82	0.78	0.35–1.72
Medicare	1.35	0.53–3.43	1.14	0.43–3.02	2.46	0.97–6.11
Private/other	1.00		1.00		1.00	
Family history of PC						
Positive family history	1.74	0.97–3.13	1.66	0.90–3.07	1.15	0.65–2.06
No family history	1.00		1.00		1.00	
Personal physician						
No regular physician	0.33*	0.17–0.64	0.35*	0.17–0.70	0.71	0.24–2.08

Characteristic	Standard Model		Initiation Model		Maintenance Model	
	Ever vs. Never Comparison	Less Than Annual vs. Never	Annual vs. Less than Annual	95% CI	Odds ratio	95% CI
Has regular physician	1.00	1.00	1.00		1.00	
Annual physical exam						
No annual exam	0.45*	0.25–0.82	0.59	0.31–1.10	0.30*	0.11–0.80
Has annual exam	1.00		1.00		1.00	
Physician discussion						
Non-comprehensive physician discussion	0.38*	0.23–0.62	0.39*	0.23–0.66	0.90	0.53–1.52
Comprehensive physician discussion	1.00		1.00		1.00	
Prostate cancer knowledge						
Low PC knowledge	0.76	0.48–1.23	0.83	0.50–1.37	0.64	0.38–1.10
High PC knowledge	1.00		1.00		1.00	
Prostate Cancer Worry						
Low cancer worry	1.31	0.77–2.22	1.46	0.83–2.56	0.69	0.38–1.26
High cancer worry	1.00		1.00		1.00	
Screening Fear						
Low screening fear	2.74*	1.56–4.81	2.35*	1.29–4.28	1.65	0.88–3.11
High screening fear	1.00		1.00		1.00	
Health Care Barriers						
Low barriers reported	1.17	0.66–2.09	1.23	0.67–2.27	0.77	0.40–1.46
High barriers reported	1.00		1.00		1.00	

* p-value< 0.05