


Are Men Making Informed Decisions According to the Prostate-Specific Antigen Test Guidelines? Analysis of the 2015 Behavioral Risk Factor Surveillance System

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Dexter L. Cooper, MPH¹, Latrice Rollins, PhD, MSW²,
Tanesha Slocumb, MPH², and Brian M. Rivers, PhD, MPH¹

Abstract

The prostate-specific antigen (PSA) screening recommendation endorses the opportunity for men to make an informed decision about whether or not to screen. This entails speaking with a provider to discuss the potential advantages, disadvantages, and uncertainties about the PSA screening test. The purpose of this study was to examine (a) the reported level of being informed about the PSA test by race and (b) the association between the receipt of the PSA test and participants reporting that they were informed about the test. U.S. adult males (ages 40–74 years) were identified from the 2015 Behavioral Risk Factors Surveillance System (BRFSS; $n = 3,877$). Chi-square analysis assessed bivariate differences among men who received different levels of PSA screening information. Binomial logistic regression models assessed the relationship of race/ethnicity and the receipt of the PSA test on being informed about the PSA test. Over half (54.3%) of the sample had a PSA test and most (72.0%) reported that they did not receive information about both the advantages and disadvantages (being informed) of the PSA test. Black men (40.3%) were significantly most likely to report being informed ($p < .001$), and 61.3% reported receipt of a recommendation from their provider ($p < .001$). White men (63.1%) were significantly more likely to report receiving the PSA test. Findings indicate that more men reported receiving the PSA test than men who reported being informed about it. Future research and interventions should strive for men of all racial and ethnic backgrounds to be informed about the PSA test before making a decision.

Keywords

behavioral research, health disparities/health equity, health-care issues, health communication, informed decision-making, oncology/cancer, population-based, prostate cancer, research

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Despite the current declines in prostate cancer mortality in the United States, African American (AA) men continue to experience a 60% higher incidence of prostate cancer and are twice as likely to die from prostate cancer in comparison to Whites (American Cancer Society, 2016b). There has been a consistent strategy employed to address prostate cancer disparities, notwithstanding an increased effort to provide prostate cancer screening as a clinical standard (Green, Davis, Rivers, Buchanan, & Rivers, 2014). However, there is ongoing concern that the

¹Morehouse School of Medicine, Department of Community Health and Prevention Medicine, Cancer Health Equity Institute, Atlanta, GA, USA

²Morehouse School of Medicine, Department of Community Health and Prevention Medicine, Prevention Research Center, Atlanta, GA, USA

Corresponding Author:

Dexter L. Cooper, MPH, Morehouse School of Medicine, Department of Community Health and Prevention Medicine, Cancer Health Equity Institute, 720 Westview Drive S.W., Atlanta, GA 30310, USA.
Email: dcooper@msm.edu



prostate-specific antigen (PSA) test contributes to an increase in false positives/false negatives and overdiagnosis that can lead to overtreatment, which exposes men to adverse treatment-related side effects such as incontinence and erectile dysfunction (National Cancer Institute [NCI], 2017b). Furthermore, two large randomized screening trials examining PSA testing recently concluded with differing results. The U.S.-based Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial reported no mortality benefit from PSA testing (Andriole et al., 2009). In contrast, the European Randomized Study of Screening for Prostate Cancer (ERSPC) demonstrated a 20% reduction in prostate cancer mortality, but this reduction was associated with a high risk of overdiagnosis (Schröder et al., 2009). Despite the low participation rates of men of African ancestry in both trials, the U.S. Preventive Services Task Force (USPSTF) recommended against offering all men routine PSA screening, citing evidence that it results in small-to-no reduction in prostate cancer mortality (Chou et al., 2011). This recommendation has engendered much confusion among clinicians and patients alike, particularly those at increased risk such as AA men, in understanding how to proceed with the early detection of prostate cancer.

In response, major cancer and health organizations recommend that men have the opportunity to make an informed decision about being screened only after having a conversation with their health-care provider about the potential advantages, disadvantages, and uncertainties surrounding the PSA screening (American Cancer Society, 2016a; Carter, 2013; CDC, 2017; Hoffman & Half, 2017; NCI, 2017a; USPSTF, 2012). This discussion should occur at age 50 years for men who are at an average risk, age 45 years for men who are at high risk (this includes AA men and men who have a first-degree relative, including a father, brother, or son who were diagnosed at an early age), and age 40 years for men at an even higher risk who have had more than one first-degree relative with prostate cancer at an early age (American Cancer Society, 2016a). However, screening may lead to some degree of overtreatment of prostate cancers and the detection of some that would have never caused significant clinical problems (USPSTF, 2012). Although observational evidence supports the trend toward lower mortality of prostate cancer, the association between lower mortality and the intensity of screening is unclear.

More recently, based on scientific advances, the physician–patient relationship has evolved to become more of a partnership in making the best choices for the patient. Given the uncertainties with the PSA test, men are increasingly encouraged to participate in a framework of shared decision-making with their health-care provider to

ensure an outcome commensurate with their values and preferences. The four anticipated patient mediating outcomes of informed decision-making (IDM) include (a) individual risk assessment, (b) consideration of values and beliefs, (c) knowledge of the risk and benefits of screening, and (d) consideration of age and life span issues (i.e., existing comorbidities; Volk et al., 2007). However, poor patient–provider interaction has been a barrier to securing adequate health care among racial and ethnic groups (McFall, Hamm, & Volk, 2006; Smedley, Stith, & Nelson, 2003; Tannor & Ross, 2006). Previous studies have revealed that AAs experience a lower quality of health services, are less likely to receive routine medical procedures than Whites are, and complain their health-care providers fail to provide complete information and are hurried in the provision of their care (Bowen, Hannon, Harris, & Martin, 2011; Smedley et al., 2003). These studies elucidate how aspects of the patient–provider encounter may serve as a barrier for AA men to participate effectively in IDM. The extent to which IDM among minority patients is facilitated in clinical and community settings is unclear. This is particularly so in four aspects of IDM in prostate cancer screening: individual risk assessment, consideration of values and beliefs, knowledge of the risks and benefits of screening, and consideration of age and life span issues (i.e., existing comorbidities).

The purpose of this study is to examine the participants' reported level of being informed about the PSA test by race, and the association between receiving the PSA test and participants stating that they were informed about the test.

Methods

Sample

Data were obtained from the 2015 Behavioral Risk Factors Surveillance System (BRFSS), a national, population-based, cross-sectional survey of adults 18 years of age and older who reside in the United States and its territories. The dataset is available to the public online by accessing <https://www.cdc.gov/brfss/>. Survey data were collected via telephone from more than 400,000 adults. The BRFSS provides state- and local-level data for measuring health-related risk behaviors, chronic health conditions, and use of preventive services. The sample for this study included men who had a routine checkup within the past 2 years, had never been told that they had cancer, aged 40 to 74 years, and answered the question that asked if they ever had a PSA test ($N = 3,877$). Only men who answered yes or no to whether they received a PSA test were included in the study.

Study Variables

Dependent variables. The dependent variables in this study were the level of being informed about the PSA test from medical staff. To assess whether participants were informed, the questionnaire items “Has a doctor, nurse, or other health professional EVER talked with you about the advantages of the PSA test?” and “Has a doctor, nurse, or other health professional EVER talked with you about the disadvantages of the PSA test?” were both dichotomized (*yes* = 1, *no* = 0). The dependent variable was recoded into two separated categories of whether informed about the PSA (*yes* = 1, *no* = 0). Informed was defined as having talked with a medical professional about the advantages and disadvantages of the PSA test.

Independent variables. There was a five-category race and ethnicity pre-recoded variable in the BRFSS dataset (*White* = 0, *Black* = 1, *Hispanic* = 2, *Other* = 3, *Multiracial* = 4). The Hispanic category is the only category with Hispanic ethnicity. The other independent variable was whether participants received the PSA test. To assess this variable the questionnaire asked, “Have you ever had a PSA test?” (*Yes* = 1, *No* = 0).

Control variables. Several sociodemographic variables were controlled for in the analysis. Education was recoded into 3 categories (*High school or less* = 0, *Some college or post high school training* = 1, *College or post graduate training* = 2). Marital status of participants dichotomized from married, divorced, widowed, separated, or never married into *Married* = 1 and *Unmarried* (Divorced, Widowed, Separated, Never married) = 0. To determine participants’ health insurance status, we used the item “Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?” (*yes* = 1, *no* = 0). Participants’ age (in years) was treated as a categorical variable in 5-year intervals from age 40 to 74 years (*40–44* = 1, *45–49* = 2, *50–54* = 3, *55–59* = 4, *60–64* = 5, *65–69* = 6, *70–74* = 7). Other variables were categorized as follows: employment status (*Employed* = 1, *Unemployed* = 0); and self-rated health (*poor* = 1, *fair* = 2, *good* = 3, *very good* = 4, *excellent* = 5). Participants were also asked, “Do you have one person you think of as your personal doctor or health care provider?” (*Yes* = 1, *only one/more than one* = 2, *no* = 0).

Analysis Plan

To provide an overview of the sample and variables in this study, univariate/bivariate analysis was performed (Table 1). Modal imputation was used to address missing data for dichotomous and categorical variables. Chi-square tests

were used to assess bivariate differences between men who were informed and not informed about the PSA test information. Second, binomial logistic regression analyses were performed for being informed of the PSA test (shown in Table 2). Model 1 shows only the control variables and the dependent variable. In Model 2, race/ethnicity was added to the model and in Model 3 whether or not the participant had a PSA test was included in the model without the race/ethnicity variables. Finally, Model 4 is the full model. The data were managed and analyses were conducted using SPSS version 23.0.

Results

Univariate/Bivariate Results

Descriptive statistics are shown in Table 1. Most of the men in the sample were insured (95.8%), White (59.3%), and married (64.7%). Most had college/postgraduate education (69.0%) and were employed (87.7%). The majority of the sample was in age groups 55–59 years (17.7%) and 60–64 years (17.0%). In addition, most of the sample indicated that they had a regular provider (79.2%). Just over half (54.3%) of the men had a PSA test and most (72.0%) reported that they were not informed (did not receive information about the advantages or disadvantages) of the PSA test.

Table 3 shows the descriptive statistics by level of being informed and by race/ethnicity. Among men who reported being informed, 79.7% were significantly more likely to receive the PSA test ($p < .001$), 80.2% had a PSA recommendation by a physician ($p < .001$), and 81.7% had a regular provider ($p = .007$), compared to men who were not informed. Informed men were also more likely to report more than a high school education (74.0%) and good, very good, or excellent health (27.5%, 36.9%, and 20.3%, respectively). Approximately, 40.3% of Black men in the study were significantly most likely to report being informed (given both the advantages and disadvantages of the PSA test; $p < .001$) and 61.3% reported receiving a recommendation from a physician ($p < .001$). White men were significantly more likely to report receiving the PSA test (63.1%), having a regular provider (81.8%), being insured (97.7%), and having very good (37.0%) to excellent (21.4%) health, all with a significance level of $p < .001$.

Binomial Logistic Regression Analyses

Table 2 shows the results from binomial logistic regression analyses for predicting men who self-reported that they were informed about the PSA test. Model 1 shows that with only the control variables, a doctor’s recommendation for PSA testing and ages 50 and over are

Table 1. Sample Descriptive Statistics.

	N	%
Dependent variable		
Informed about PSA	1,086	28.0
Not informed about PSA	2,791	72.0
Independent variables		
PSA test received	2,105	54.3
PSA test not received	1,772	45.7
Race/ethnicity		
White	2,300	59.3
Black	371	9.6
Hispanic	276	7.1
Other	599	15.5
Multiracial	331	8.5
Control variables		
Insured	3,715	95.8
Not insured	162	4.2
Regular provider	3,079	79.4
No regular provider	798	20.6
Married	2,521	65.0
Not married	1,356	35.0
Employed	3,417	88.1
Not employed	460	11.9
Education		
Less than high school	196	5.1
High school graduate	992	25.6
More than high school	2,689	69.4
Self-rated health		
Poor	150	3.9
Fair	463	11.9
Good	1,242	32.0
Very good	1,301	33.6
Excellent	721	18.6
Age		
40–44	393	10.1
45–49	448	11.6
50–54	638	16.5
55–59	686	17.7
60–64	659	17.0
65–69	633	16.3
70–74	420	10.8
PSA recommended by doctor		
Yes	2,110	54.4
No	1,767	45.6

Note. $N = 3,877$.

significant in predicting men who self-report as being informed. Model 2, which includes race/ethnicity, shows that Black men had 94.6% higher odds and men who graduated from college or a technical school had 24.3 higher odds of reporting being informed. The odds and significance for the control variables were similar to those in Model 1. In Model 3, being a college or technical

school graduate was no longer significant, suggesting that receiving the PSA test modified education level. Also men who were in the 50–54, 65–69, and 70–74 age categories were no longer at a greater odds of self-reporting they had been informed. Model 4, the full model, shows that men who received the PSA test had two times higher odds of reporting they had been informed ($p < .001$). Black and multicultural men had 99.6% ($p < .001$) and 43.9% ($p = .018$) higher odds, respectively, of reporting having been informed. Men who were college or technical school graduates had 21.5% ($p = .041$) higher odds of reporting having been informed, and men who reported that the PSA test was recommended by a physician had over three times higher odds of reporting that they were informed about the PSA test ($p < .001$).

Discussion

The goal of this study was to examine screen-eligible men's self-reported levels of being informed about the PSA test by race and the association between receiving the PSA test and participants stating that they were informed about the test. In this multiethnic sample that received the PSA test within the past 2 years of the 2015 BRFSS survey, most men (72.0%) reported that they were not informed about the PSA test; however, over half (54.3%) of men had received the PSA test and had a regular provider (79.2%). Men who had a provider, had more than a high school education, and reported receiving a PSA recommendation from a doctor were more likely to be informed. There were also significant statistical differences among racial/ethnic groups. White men were more likely to be insured, have a regular provider, be employed, and report very good health. More Black men (40.3%) reported that they were informed and they were more likely to receive a PSA test recommendation from a provider. This is possibly due to physicians knowing of the increased risk of Black men developing prostate cancer compared to other racial/ethnic groups. White and Hispanic men were the least likely to receive a recommendation. Black and Hispanic men were the least likely to have more than a high school education. A greater proportion of Black men were more likely to report being informed compared to all other racial/ethnic groups, but less likely to undergo PSA testing. These findings are in contrast to those of a recent study that found discussions of the advantages and disadvantages of PSA testing were positively associated with increased uptake of the PSA test (Li, Zhao, & Hall, 2015). It is possible that the contrast in findings may be attributable to men making informed decisions not to have the PSA test. However, it is also possible that men who may have made an informed decision not to have the PSA test were persuaded due to a physician's recommendation.

Table 2. Binomial Logistic Regression Models Predicting Self-Report of Having Been Informed About the PSA Test.

	Model 1		Model 2 (race/ethnicity included)		Model 3 (received PSA test included)		Model 4 (full model)	
	OR (95% CI)	p value	OR (95% CI)	p value	OR (95% CI)	p value	OR (95% CI)	p value
Study variables								
Received PSA test ^a					2.018 [1.597, 2.550]	<.001	2.093 [1.652, 2.651]	<.001
Race/ethnicity^b								
Black			1.946 [1.487, 2.548]	<.001			1.996 [1.522, 2.617]	<.001
Hispanic			1.107 [0.794, 1.543]	.549			1.129 [0.808, 1.577]	.476
Multicultural			1.313 [0.976, 1.765]	.072			1.439 [1.065, 1.943]	.018
Other			1.066 [0.847, 1.342]	.586			1.129 [0.895, 1.425]	.306
Control variables								
Insured ^c	0.769 [0.514, 1.151]	.202	0.835 [0.554, 1.259]	.389	0.725 [0.483, 1.086]	.119	.0784 [0.519, 1.185]	.249
Married ^d	0.960 [0.815, 1.132]	.629	0.918 [0.838, 1.167]	.892	0.934 [0.791, 1.102]	.417	0.959 [0.811, 1.133]	.620
Regular provider ^e	1.051 [0.866, 1.276]	.613	1.687 [0.874, 1.290]	.544	1.049 [0.864, 1.274]	.631	1.063 [0.874, 1.292]	.543
Employed ^f	0.807 [0.628, 1.037]	.093	1.756 [0.654, 1.085]	.183	0.791 [0.615, 1.018]	.069	0.825 [0.640, 1.064]	.139
Education^g								
High school graduate	0.857 [0.693, 1.059]	.152	0.853 [0.689, 1.055]	.142	0.873 [0.706, 1.081]	.213	0.869 [0.702, 1.077]	.199
College/technical graduate	1.191 [0.992, 1.429]	.062	1.243 [1.032, 1.496]	.022	1.163 [0.968, 1.398]	.107	1.215 [1.008, 1.464]	.041
Self-reported health^h								
Fair	1.221 [0.779, 1.914]	.384	1.194 [0.760, 1.874]	.442	1.217 [0.774, 1.914]	.396	1.191 [0.756, 1.877]	.450
Good	1.037 [0.679, 1.558]	.865	1.020 [0.666, 1.561]	.928	1.009 [0.658, 1.547]	.967	0.971 [0.646, 1.524]	.971
Very good	1.371 [0.894, 2.103]	.148	1.364 [0.888, 2.096]	.157	1.320 [0.858, 2.031]	.207	1.318 [0.854, 2.032]	.212
Excellent	1.379 [0.866, 2.102]	.186	1.362 [0.872, 2.126]	.175	1.304 [0.834, 2.039]	.245	1.327 [0.846, 2.080]	.218
PSA recommended by doctor ⁱ	5.093 [4.278, 6.064]	<.001	5.62 [4.238, 6.047]	<.001	3.305 [2.645, 4.131]	<.001	3.249 [2.597, 4.064]	<.001
Age^l								
45–49	1.347 [0.908, 1.996]	.138	1.427 [0.959, 2.123]	.079	1.297 [0.873, 1.926]	.198	1.378 [0.924, 2.053]	.116
50–54	1.449 [1.009, 2.081]	.045	1.521 [1.055, 2.192]	.025	1.290 [0.895, 1.861]	.172	1.353 [0.935, 1.957]	.109
55–59	1.864 [1.308, 2.655]	.001	2.017 [1.409, 2.886]	<.001	1.576 [1.100, 2.258]	.013	1.700 [1.182, 2.447]	.004
60–64	1.861 [1.304, 2.654]	.001	2.006 [1.399, 2.874]	<.001	1.526 [1.062, 2.193]	.022	1.637 [1.135, 2.363]	.008
65–69	1.703 [1.190, 2.438]	.004	1.838 [1.278, 2.642]	.001	1.385 [0.951, 2.062]	.081	1.523 [1.028, 2.156]	.035
70–74	1.749 [1.197, 2.556]	.004	1.912 [1.302, 2.807]	.001	1.400 [1.197, 2.556]	.088	1.749 [1.029, 2.253]	.035
Intercept	0.105	<.001	0.077	<.001	0.117	<.001	0.082	<.001

Note. N = 3,877. Reference categories are as follows: a = did not receive a PSA test; b = White; c = not insured; d = not married; e = no regular provider; f = not employed; g = less than high school; h = poor self-reported health; i = doctor did not recommend the PSA test; j = age 40–44 years. The coefficients are odds ratios.

Table 3. Chi-Square Analyses, by Self-reported Informed Status and Race/Ethnicity.

	Informed status		Race/ethnicity					p value
	Informed (N = 1,086)	Not informed (N = 2,791)	White (N = 2,300)	Black (N = 318)	Hispanic (N = 276)	Multicultural (N = 331)	Other (N = 599)	
	%	%	%	%	%	%	%	
Dependent variables								
Informed about PSA	–	–	29.0	40.3	21.4	23.9	22.9	<.001
Independent variables								
PSA test received	79.7	44.4	63.1	56.6	38.8	31.7	39.1	<.001
Race/ethnicity								
White	61.3	58.5	–	–	–	–	–	
Black	11.8	6.8						
Hispanic	5.4	7.8						
Multicultural	.3	9.0						
Other	12.6	16.6						
Control variables								
Insured	95.5	96.3	97.7	89.3	87.7	96.4	95.5	<.001
Has a regular provider	81.7	78.2	81.8	77.0	72.5	71.9	77.8	<.001
Married	66.0	64.2	66.9	50.0	59.8	61.0	68.1	<.001
Employed	87.9	87.6	90.0	75.8	80.8	84.9	90.5	<.001
Education								
Less than high school	4.7	5.2	3.2	10.1	19.6	4.5	2.5	<.001
High school graduate	20.9	27.4	23.0	34.9	33.0	33.0	22.2	<.001
More than high school	74.0	67.1	73.5	54.1	47.1	60.7	75.3	<.001
Self-rated health								
Poor	3.5	4.0	3.5	5.0	5.4	4.5	3.3	.332
Fair	11.7	12.0	9.2	16.0	26.1	16.0	11.0	<.001
Good	27.5	33.8	28.7	32.1	35.1	39.9	38.6	<.001
Very good	36.9	32.1	37.0	31.1	19.6	28.4	31.4	<.001
Excellent	20.3	18.0	21.4	15.4	13.4	11.2	15.7	<.001
Age								
40–44	4.8	12.2	7.7	15.7	18.1	13.9	10.9	<.001
45–49	8.0	12.9	10.9	10.4	18.8	13.3	10.9	.002
50–54	14.7	17.1	15.0	19.8	19.6	16.3	18.2	.056
55–59	19.9	16.8	18.0	15.4	14.9	16.9	20.0	.271
60–64	19.9	15.9	17.8	17.0	11.6	15.7	16.4	.122
65–69	19.4	15.1	18.2	13.5	12.0	14.5	14.0	.006
70–74	13.3	9.9	12.4	8.2	5.1	9.4	9.7	.001
PSA recommended by doctor								
Yes	80.2	19.2	59.7	61.3	38.0	34.4	37.1	<.001
No	41.8	55.8	38.2	36.8	59.4	64.7	61.8	<.001

Note. N = 3,877. Bold values significance at $p < .05$.

A major distinction of this study is the inclusion of recommendation from a physician as an important factor to the level of PSA testing. Our study indicated that over half of the sample (52.5%) reported that doctors recommended the PSA test, even though expert organizations on this topic have encouraged educating men about the test to ensure they make an informed decision (American Cancer Society, 2016a; USPSTF, 2012). It is important for this physician–patient relationship to follow a balance, given that some doctors’ beliefs about the usefulness of the PSA test influences whether or not they recommend it, while others use the latest data and guidelines of expert organizations for PSA testing decisions (McFall et al., 2006; Tannor & Ross, 2006; Volk et al., 2007). Liao, Ommerborn, and Clark (2017) in a recent study concluded provider recommendations and having a personal doctor are associated with routine PSA testing. Additionally, the authors recommended that providers and policymakers should be aware of how the content and context of communication with patients, beyond discussions of risks and benefits, can influence routine PSA testing behaviors. Inversely, policymakers and researchers must take into account that it would take more than the allotted time a provider has to discuss the benefits, risks, and uncertainties of the PSA test with a patient. However, it is imperative for men to comprehend terminology when discussing prostate cancer screening. To reduce fear and embarrassment, increase health literacy about prostate screening, and enhance information seeking and sharing, it may be beneficial for men to be equipped with prostate cancer screening information with a health literature level appropriate for the general population before discussing it with a provider (Saab et al., 2017).

Black men in this study were most likely to receive PSA test information, but overall, the proportion of informed men of all racial/ethnic groups and screening age was low. Although Black men have a higher incidence and mortality rate than other men, it is important to communicate information about the PSA test advantages and disadvantages to all men to ensure an informed decision is achieved (CDC, 2016). These findings are commensurate with other studies examining shared decision-making for PSA testing. In a cross-sectional evaluation using the 2012 and 2014 BRFSS dataset, Turini, Gjelsvik, and Renzulli (2017) found less than one third of the respondents reported that they had been told about both advantages and disadvantages of PSA testing. In comparison to 2012 and 2014 datasets, the authors found the trend of inadequate counseling prevailed among men undergoing PSA testing. Men in the 2014 dataset, after controlling for race/ethnicity, education, income status, or insurance status, were more likely to undergo PSA testing without being informed about the potential advantages and disadvantages as compared to in 2012.

Considering the difference in recommendations among expert organizations, providing information to men enhances their ability to make informed decisions. Research studies on the effectiveness of PSA tests have drawn conflicting conclusions and clinical practice guidelines conflict on the criteria and merits of screening (Wilt, Scardino, Carlsson, & Basch, 2014). USPSTF has recently upgraded the recommendation for screening from “D” to “C” for men ages 55–69 years; however, the recommendation against routine PSA screening remains for men age 70 years and older.

This study has acknowledged limitations that should be addressed in subsequent studies. First, this is a cross-sectional study, which is only a snapshot of the sample population. Therefore, while the study showed the association between the independent variables and the dependent variables, a causal relationship could not be confirmed. Second, the data collected were self-reported, which may introduce recall bias into the study. Third, inaccuracies may be introduced due to the participants’ lack of knowledge about whether the PSA test was performed. Fourth, there is an assumption that the participants were provided with standard information about the advantages and disadvantages of the PSA test to decide whether or not to have the test. Finally, other factors such as fear, social desirability (reporting being informed for societal acceptability), or medical mistrust may have been reasons for not having a PSA test instead of IDM.

Conclusion

The majority of men are not completely informed about the PSA test from their physicians; yet, findings indicate that physicians continue to recommend the test though expert organizations endorse IDM. Though physicians are instrumental in delivering health information, Black men in this study were more likely to report having received a PSA recommendation, which is a further rationale for the need of decision aids to provide men with the proper messaging around PSA testing. Future research and interventions should strive for men of all racial and ethnic backgrounds to be informed about the PSA test before making a decision.

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References

- American Cancer Society. (2016a). *American Cancer Society recommendations for prostate cancer early detection*. Retrieved, March 16, 2017, from <https://www.cancer.org/cancer/prostate-cancer/early-detection/acs-recommendations.html>
- American Cancer Society. (2016b). *Cancer facts & figures for African Americans 2016–2018*. Atlanta, GA: American Cancer Society.
- Andriole, G. L., Crawford, E. D., Grubb, R. L., Buys, S. S., Chia, D., Church, T. R., ... Berg, C. D. (2009). Mortality results from a randomized prostate-cancer screening trial. *The New England Journal of Medicine*, *360*(13), 1310–1319. doi:10.1056/NEJMoa0810696
- Bowen, D. J., Hannon, P. A., Harris, J. R., & Martin, D. P. (2011). Prostate cancer screening and informed decision-making: Provider and patient perspectives. *Prostate Cancer and Prostatic Diseases*, *14*(2), 155–161. doi:10.1038/pcan.2010.55
- Carter, H. B. (2013). American Urological Association (AUA) guideline on prostate cancer detection: process and rationale. *BJU International*, *112*(5), 543–547. doi:10.1111/bju.12318
- CDC. (2016). *CDC – Prostate cancer rates by race and ethnicity*. Retrieved, May 25, 2017, from <https://www.cdc.gov/cancer/prostate/statistics/race.htm>
- CDC. (2017). *Should I get screened for prostate cancer?* Retrieved from https://www.cdc.gov/cancer/prostate/basic_info/get-screened.htm
- Chou, R., Crosswell, J. M., Dana, T., Bougatsos, C., Blazina, I., Fu, R., ... Lin, K. (2011). Screening for prostate cancer: A review of the evidence for the U.S. Preventive Services Task Force. *Annals of Internal Medicine*, *155*(11), 762–771. doi:10.7326/0003-4819-155-11-201112060-00375
- Green, B. L., Davis, J. L., Rivers, D., Buchanan, K. L., & Rivers, B. M. (2014). Cancer health disparities. In D. S. Alberts & L. M. Hess (Eds.), *Fundamentals of cancer prevention* (pp. 151–193). Berlin, Heidelberg: Springer. doi:10.1007/978-3-642-38983-2_6
- Hoffman, A., & Half, E. E. (2017). Update on screening for urological malignancies. *Rambam Maimonides Medical Journal*, *8*(4), e0041. doi:10.5041/RMMJ.10318
- Li, J., Zhao, G., & Hall, I. J. (2015). Pre-screening discussions and prostate-specific antigen testing for prostate cancer screening. *American Journal of Preventive Medicine*, *49*(2), 259–263. doi:10.1016/j.amepre.2015.02.007
- Liao, J. M., Ommerborn, M. J., & Clark, C. R. (2017). Association between features of patient-provider discussions and routine prostate-specific antigen testing. *PLoS One*, *12*(5), e0177687. doi:10.1371/journal.pone.0177687
- McFall, S. L., Hamm, R. M., & Volk, R. J. (2006). Exploring beliefs about prostate cancer and early detection in men and women of three ethnic groups. *Patient Education and Counseling*, *61*(1), 109–116. doi:10.1016/j.pec.2005.02.016
- National Cancer Institute. (2017a). *Prostate cancer screening (PDQ®)—Health professional version*. Retrieved from <https://www.cancer.gov/types/prostate/hp/prostate-screening-pdq>
- National Cancer Institute. (2017b). *Prostate-specific antigen (PSA) test*. Retrieved, January 24, 2018, from <https://www.cancer.gov/types/prostate/psa-fact-sheet>
- Saab, M. M., Reidy, M., Hegarty, J., O'Mahony, M., Murphy, M., Von Wagner, C., & Drummond, F. J. (2017). Men's information-seeking behavior regarding cancer risk and screening: A meta-narrative systematic review. *Psycho-Oncology*, *27*(2), 410–419. doi:10.1002/pon.4506
- Schröder, F. H., Hugosson, J., Roobol, M. J., Tammela, T. L. J., Ciatto, S., Nelen, V., ... Auvinen, A. (2009). Screening and prostate-cancer mortality in a randomized European study. *The New England Journal of Medicine*, *360*(13), 1320–1328. doi:10.1056/NEJMoa0810084
- Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, DC: National Academies Press (US). Retrieved from <http://www.ncbi.nlm.nih.gov/books/NBK220358/>
- Tannor, B. B., & Ross, L. (2006). Physician-patient discussions about prostate-specific antigen test use among African-American men. *Journal of the National Medical Association*, *98*(4), 532–538.
- Turini, G. A., III, Gjelsvik, A., & Renzulli, J. F., II. (2017). The state of prescreening discussions about prostate-specific antigen testing following implementation of the 2012 United States Preventive Services Task Force statement. *Urology*, *104*, 122–130. doi:10.1016/j.urology.2016.12.069
- U.S. Preventive Services Task Force. (2012). *Final recommendation statement: Prostate cancer: screening*. Rockville, MD: U.S. Preventive Services Task Force. Retrieved from <https://www.uspreventiveservicestaskforce.org/Page/Document/RecommendationStatementFinal/prostate-cancer-screening>
- Volk, R. J., Hawley, S. T., Kneuper, S., Holden, E. W., Stroud, L. A., Cooper, C. P., ... Pavlik, V. N. (2007). Trials of decision aids for prostate cancer screening: A systematic review. *American Journal of Preventive Medicine*, *33*(5), 428–434. doi:10.1016/j.amepre.2007.07.030
- Wilt, T. J., Scardino, P. T., Carlsson, S. V., & Basch, E. (2014). Prostate-specific antigen screening in prostate cancer: Perspectives on the evidence. *Journal of the National Cancer Institute*, *106*(3), dju010. doi:10.1093/jnci/dju010