

# Exploring Racial Differences Surrounding Prostate Cancer Screening: Beliefs and Attitudes in Community Dwelling Men Attending an Urban Men's Health Event

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## Abstract

The purpose of the study was to explore attitudes/beliefs in men attending an urban health fair to explore barriers to prostate cancer (PCa) screening. Five hundred and forty-four men attending the PCa booth at the fair in 2014 or 2015 completed questionnaires about PCa. Data were examined using Pearson's  $\chi^2$ , Fisher's Exact, and Wilcoxon rank tests after grouping men by African American (AA) and non-African American ethnicity. Three hundred and twenty-six (60%) men were AA and two hundred and eighteen (40%) were non-AA (89% white). Median age (54 vs. 56 years) and prior PCa screening were similar between AA and non-AA; income ( $p = .044$ ) and education ( $p = .0002$ ) differed. AA men were less likely to have researched prostate-specific antigen (PSA) on the internet ( $p = .003$ ), but more used TV ( $p = .003$ ) and media ( $p = .0014$ ) as information sources. Family members had a stronger influence over screening decisions for AA men ( $p = .005$ ). After reading PSA information, AA men were more likely to still be confused ( $p = .008$ ). A higher proportion of AA men were less worried about dying from PCa ( $p = .0006$ ), but would want treatment immediately instead of watchful waiting ( $p < .0001$ ). Interestingly, a higher proportion of AA men indicated that they would prefer not to know if they had PCa ( $p = .001$ ). Ultimately, more AA men had a PSA done (98.4% vs. 95.1%;  $p = .031$ ). When considering screening eligible men, a higher proportion of AA men had an abnormal PSA (13.1% vs. 5.3%;  $p = .037$ ). AA men's beliefs surrounding PCa differ from non-AA men, and should be considered when developing culturally appropriate education, screening, and treatment strategies for this group.

## Keywords

prostate cancer beliefs, PSA, African American, prostate cancer screening

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The 2012 US Preventive Services Task Force's (USPSTF) recommendation against prostate-specific antigen (PSA) testing for prostate cancer (PCa) screening has caused confusion for health-care professionals and their patients (Moyer, 2012). In response, the American Urological Association (AUA) guidelines were revised to provide a clinical framework for the early detection of prostate cancer in asymptomatic, average risk men. The AUA guidelines for PCa screening and early detection recommend against PSA screening in men under age 40. For men ages 40–54 years old, routine screening is not recommended, but the ultimate decision should be individualized by taking into account family history and race. Shared decision making is recommended for men age 55–69 years old to

minimize potential harm from screening and treatment. Finally, AUA guidelines recommend against routine PSA testing for men older than the age of 70 or for any man with less than 10–15 years of additional life expectancy (Carter et al., 2013).

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Men are less likely to seek preventative care than women, more likely than women to be hospitalized for chronic conditions, and have a shorter lifespan. According to Whiteley, DiBonaventura, Wagner, Alvir, and Shah (2013), menopausal symptoms lead to an increased utilization of health-care resources and perhaps more opportunity for preventative care in women during midlife. Men of the same age may not seek preventative care even though the risk of prostatic hypertrophy, prostate cancer (PCa), and erectile dysfunction are associated with the same period of life. In order to promote shared decision making regarding prostate cancer screening, providers need to be aware of factors that may influence a patient's decision or present barriers to screening, such as input from family and peers, lack of transportation, financial resources, or mistrust of the health-care system. In men, knowledge, attitudes and values, fear, attributes of masculinity, communication, and resources have all previously been identified as barriers to health screening (Vaidya, Partha, & Karmaker, 2012; Teo, Ng, Booth, & White, 2016).

### *The Present Study*

In light of the changes in PCa screening guidelines, identifying beliefs and barriers to screening in African American men and other high risk groups is crucial since this population is more likely to develop and die from prostate cancer (DeSantis et al., 2016). Exploring beliefs and attitudes unique to African American men is a logical first step in developing targeted resources that will help men receive accurate information and participate in shared decision making with their physician. Community health events tailored specifically to men's health needs may present an excellent opportunity to provide education and health screening to men wary of traditional health-care venues. This article explores the knowledge, beliefs, and attitudes surrounding prostate cancer screening and treatment in a large population of community dwelling men that attended a free urban health fair.

### **Materials and Methods**

Several health advocacy groups in the United States have collaborated to improve awareness of issues specific to men's health. As part of this initiative, community stakeholders in Detroit, Michigan, have partnered for several years to hold a free annual health education and screening event for men. In order to make the event attractive and accessible to urban dwelling men, the event is held each fall at a professional sports arena within the city's limits. There is no charge for admission or screening activities conducted during the event. Preregistration is not required and men are encouraged to bring their family members.

Health-care professionals, medical students, and community volunteers staff several booths that offer laboratory and health screenings. Questionnaires assessing demographics such as age, education, and income, as well as medical history, attitudes, and behaviors toward health care, and other factors associated with overall health are administered to consenting health fair attendees. Men who chose to visit the prostate cancer screening booth were asked to read a one-page information sheet about PCa and its screening options. The information sheet was developed by a urology-led team of health-care professionals and was based on the AUA, the 2012 USPSTF guidelines as well as the American Cancer Society recommendations. Men were then invited to complete an additional questionnaire to assess their knowledge, beliefs, and attitudes surrounding PSA testing and PCa treatment after reading the educational material.

The primary aim of this study was to describe differences in attitudes, beliefs, and behaviors surrounding prostate cancer screening. After obtaining institutional review board approval, all data that had been collected at two consecutive health events (2014 and 2015) were combined and examined for demographics and beliefs and behaviors regarding PCa, PCa education, and PCa screening. The questionnaire used in 2014 and 2015 was identical. For men that attended both events, only the 2014 health fair data were included. All questionnaire and screening data were de-identified prior to analysis.

### *Statistical Analysis*

Missing data remained missing and were not replaced with substitutions or imputations. Descriptive statistics were performed and categorical variables are reported as counts and percent frequencies. Continuous data are reported as either means  $\pm$ SD or medians and ranges. African American (AA) men were compared to non-African American men using Pearson's  $\chi^2$  test where appropriate (expected frequency  $>5$ ) for categorical data, otherwise, Fisher's exact tests were used. Continuous variables were examined for normality. Normally distributed data were examined using two sample *t*-tests. Data that were not normally distributed were examined using non-parametric Wilcoxon rank tests. All analyses used the SAS system for Windows® (v. 9.3, Cary, NC).

### **Results**

A total of 1,334 men attended the 2014 ( $n = 803$ ) and 2015 ( $n = 531$ ) health fairs. Of those men, 1,308 provided at least some questionnaire data. In total, 976 men reported race with the majority identifying as African American/black (AA; 65.8%). 346/626 (55.3%) AA and

**Table 1.** Description of Men That Did/Did Not Attend PSA Booth.

	Attended booth N = 792	Did not attend booth N = 516	p value
<b>Age</b>	N = 789	N = 435	.009 <sup>a</sup>
Mean ± SD (median)	53 ± 12 (54)	51 ± 14 (53)	
Min to Max	20 to 87	18 to 87	
<b>Race</b>	N = 544	N = 436	< .0001 <sup>b</sup>
• African American	326 (59.9%)	319 (73.2%)	
• White/Caucasian	201 (37.0%)	100 (22.9%)	
• Arab American/Middle Eastern	5 (0.9%)	6 (1.1%)	
• Asian American	8 (1.5%)	3 (0.7%)	
• American Indian/Alaska Native	1 (0.2%)	4 (0.9%)	
• Native Hawaiian/Other Pacific Islander	0	1 (0.2%)	
• Other	3 (0.6%)	3 (0.7%)	
<b>Ethnicity</b>	8 (1.0%)	13 (2.5%)	.02
Hispanic/Latino			
<b>African American</b>	326/544 (59.9%)	319/436 (73.2%)	< .0001 <sup>b</sup>
<b>Education</b>	N = 547	N = 445	.0026 <sup>b</sup>
• <12th grade/General Equivalency Diploma	55 (10.1%)	71 (16.0%)	
• High school	152 (27.8%)	145 (32.6%)	
• 2 yr college	155 (28.3%)	121 (27.2%)	
• 4 yr college	115 (21.0%)	66 (14.8%)	
• Post graduate	70 (12.8%)	42 (9.4%)	
<b>Marital status</b>	N = 550	N = 445	.033 <sup>b</sup>
• Married	208 (37.8%)	127 (28.5%)	
• Single	215 (39.1%)	200 (44.9%)	
• Divorced	94 (17.1%)	78 (17.5%)	
• Separated	11 (2.0%)	17 (3.8%)	
• Widowed	11 (2.0%)	13 (2.9%)	
• Domestic partner	11 (2.0%)	10 (2.3%)	
<b>Personal history of PCa</b>	21/413 (5.1%)	27/317 (8.5%)	.06
<b>Family history of PCa</b>	N = 405	N = 307	.08
• Yes	93 (23.0%)	51 (16.6%)	
• No	297 (73.3%)	247 (80.5%)	
• Not sure	15 (3.7%)	9 (2.9%)	

Note. <sup>a</sup>Two sample t-test. <sup>b</sup> $\chi^2$  test. PSA = prostate-specific antigen; SD = standard deviation; PCa = prostate cancer.

36/330 (10.9%) non-AA men ( $p < .0001$ ) were living within the city limits.

The majority of all men attending the health fair chose to visit the PSA booth (792; 60.6%). When men who chose to attend the PSA booth were compared with men who did not (Table 1), those attending the booth were older (median age 54 vs. 53 years;  $p = .009$ ), and a lower proportion of men identified as AA (59.9% vs 73.2%;  $p < .0001$ ). Although the reasons are unknown, many AA men did not seize the opportunity for PSA education/screening ( $p < .0001$ ). Education level and marital status also differed between groups (Table 1).

Differences between AA ( $n = 326$ ) and non-AA ( $n = 218$ ) men that attended the PSA booth were then investigated. The majority of non-AA men were white (89.4%). Table 2 depicts demographics and beliefs surrounding

PCa in both groups. Although income and educational levels were lower in AA men, mean age, employment status (the majority in each group were employed), and past history of PSA and digital rectal exam (DRE) were similar between groups (Table 2).

Table 3 illustrates the differences in attitudes and behaviors toward prostate cancer screening and treatment between AA and non-AA groups. AA men were less likely to understand PSA testing prior to reading the information sheet (49.5% vs. 55.8%;  $p = .008$ ) and more likely to still be confused after reading the information sheet (13.1% vs. 4.8%;  $p = .008$ ). AA men were more likely to be influenced by family (28.8% vs. 18.0%;  $p = .005$ ) and television (20.8% vs. 11.0%;  $p = .003$ ), and less likely to use the internet (29.7% vs. 42.4%;  $p = .003$ ) for obtaining information regarding prostate cancer. AA men were also more

**Table 2.** Demographics and PCa Beliefs.

	AA <i>n</i> = 326	Non-AA <i>n</i> = 218	<i>p</i> value
<b>Age</b>			.15
Mean ± SD (median)	53 ± 11 (54)	55 ± 11 (56)	
Min to Max	20 to 87	25 to 80	
<b>Income</b>	<i>N</i> = 268	<i>N</i> = 182	.044 <sup>a</sup>
• <\$35,000	137 (51.1%)	76 (41.8%)	
• \$35,000–59,999	74 (27.6%)	56 (30.8%)	
• \$60,000–99,999	47 (17.5%)	33 (18.1%)	
• ≥\$100,000	10 (3.7%)	17 (9.3%)	
<b>Employed</b>	182/311 (58.5%)	130/211 (61.6%)	.48
<b>Education</b>	<i>N</i> = 322	<i>N</i> = 217	.0002 <sup>a</sup>
• <12th grade/General Equivalency Diploma	44 (13.7%)	9 (4.2%)	
• High school	90 (28.0%)	60 (27.7%)	
• 2 yr college	95 (29.5%)	57 (26.3%)	
• 4 yr college	63 (19.6%)	51 (23.5%)	
• Post graduate	30 (9.3%)	40 (18.4%)	
<b>PSA in the past</b>	<i>N</i> = 322		.48
• Yes	143 (44.4%)	106 (48.6%)	
• No	138 (42.9%)	82 (37.6%)	
• Not sure	41 (12.7%)	30 (13.8%)	
<b>When was your last DRE?</b>	<i>N</i> = 317	<i>N</i> = 210	.55
• Within the last year	45 (14.2%)	38 (18.1%)	
• 1–2 years ago	40 (12.6%)	33 (15.7%)	
• 2–5 years ago	46 (14.5%)	27 (12.9%)	
• More than 5 years ago	33 (10.4%)	23 (11.0%)	
• Never	127 (40.1%)	70 (33.3%)	
• Not sure	26 (8.3%)	19 (9.1%)	
<b>Worried about getting PCa</b>	<i>N</i> = 323	<i>N</i> = 217	.053
• Very worried	45 (13.9%)	22 (10.1%)	
• Slightly worried	110 (34.1%)	92 (42.4%)	
• Not worried very much	106 (32.8%)	76 (35.0%)	
• Not worried at all	62 (19.2%)	27 (12.4%)	
<b>Worried about dying from PCa</b>	<i>N</i> = 323	<i>N</i> = 217	.30
• Very/slightly worried	111 (34.4%)	84 (38.7%)	
• Not worried very much/at all	212 (65.6%)	133 (61.3%)	
<b>If diagnosed with PCa</b>	<i>N</i> = 272	<i>N</i> = 186	< .0001 <sup>a</sup>
• I would want treatment immediately	227 (83.5%)	125 (67.2%)	
• I would consider “watchful waiting”	45 (16.5%)	61 (32.8%)	
<b>PCa treatment helps men live longer</b>	298/317 (94.0%)	184/207 (88.9%)	.035 <sup>a</sup>
<b>If I have PCa, I would rather not know</b>	45/297 (15.2%)	12/204 (5.9%)	.001 <sup>a</sup>
<b>Even though a prostate biopsy can miss cancer, I would still have one</b>	268/304 (88.2%)	183/200 (91.5%)	.23
<b>If I had PCa, I believe I may live a better life without treatment</b>	31/299 (10.4%)	19/198 (9.6%)	.78
<b>PCa treatment is more important than the potential urinary side effects</b>	256/297 (86.2%)	161/190 (84.7%)	.65
<b>PCa treatment is more important than the potential erectile dysfunction</b>	255/298 (85.6%)	164/191 (85.9%)	.93

Note. <sup>a</sup> $\chi^2$  test. PSA = prostate-specific antigen; SD = standard deviation; PCa = prostate cancer; DRE = digital rectal exam.

inclined to indicate that media coverage influenced their decision to want PSA testing sooner (49.7% vs. 33.5%;

$p = .0014$ ) (Table 3). These data suggest that the internet may be a less viable route for disseminating screening

**Table 3.** PSA Information Sources and Beliefs.

	AA n = 326	Non-AA n = 218	p value
<b>Before reading the PSA information sheet:</b>	N = 291	N = 208	.008 <sup>a</sup>
• I basically knew what PSA testing was	144 (49.5%)	116 (55.8%)	
• I understand what PSA testing is after reading this	109 (37.5%)	82 (39.4%)	
• I'm still confused	38 (13.1%)	10 (4.8%)	
<b>How do you usually educate yourself on PSA screening requirements?</b>	N = 313	N = 210	
• Health-care professional	160 (51.1%)	90 (42.9%)	.06
• Internet	93 (29.7%)	89 (42.4%)	.003 <sup>a</sup>
• Newspaper or magazine	46 (14.7%)	31 (14.8%)	.98
• Radio	28 (9.0%)	11 (5.2%)	.11
• Friend/Family	54 (17.3%)	26 (12.4%)	.13
• TV	65 (20.8%)	23 (11.0%)	.003 <sup>a</sup>
• Health fairs	64 (20.5%)	36 (17.1%)	.35
• Other	18 (5.8%)	12 (5.7%)	.99
• Don't research health issues	23 (7.4%)	23 (11.0%)	.15
<b>Which of the following people influence your decision about screening for prostate cancer</b>	N = 316	N = 211	
• Significant other	78 (24.7%)	46 (21.8%)	.44
• Family member	91 (28.8%)	38 (18.0%)	.005 <sup>a</sup>
• Friend	27 (8.5%)	13 (6.2%)	.31
• Health professional	75 (23.7%)	51 (24.2%)	.91
• No one	99 (31.3%)	79 (37.4%)	.15
• Not sure	6 (1.9%)	4 (1.9%)	1.00
<b>Has media coverage made you rethink your decision to obtain PSA testing?</b>	N = 308	N = 206	.0014 <sup>a</sup>
• No	145 (47.1%)	128 (62.1%)	
• Yes-made me want it sooner	153 (49.7%)	69 (33.5%)	
• Yes made me wait or not have it at all	10 (3.3%)	9 (4.4%)	
<b>Who should decide about having PSA testing</b>	N = 315	N = 209	.91
• My Dr, while knowing my opinion	32 (10.2%)	23 (11.0%)	
• My doctor and I should both make the decision	136 (43.2%)	92 (44.0%)	
• Mainly I should, while knowing my Dr's opinion	147 (46.7%)	94 (45.0%)	
<b>PSA test would reassure me</b>	290/302 (96.0%)	200/207 (96.6%)	.73
<b>PSA tests does more harm than good</b>	35/302 (11.6%)	19/203 (9.4%)	.43
<b>PSA can lead to unnecessary treatment</b>	67/294 (22.8%)	42/200 (21.0%)	.64
<b>All men my age all should have PSA test</b>	291/308 (94.5%)	183/200 (91.5%)	.19
<b>I am still confused about when PSA is recommended</b>	73/295 (24.8%)	46/195 (23.6%)	.77
<b>Yes, I would like a PSA test</b>	302/307 (98.4%)	193/203 (95.1%)	.031 <sup>a</sup>
<b>Reasons</b>			
I don't go to the doctor regularly	85	55	
Early detection is important	198	116	
I am having urinary symptoms	46	21	
I want to know if I am at risk for having cancer	143	77	
Because of our family history	59	29	
Having a PSA would give me peace of mind	145	69	
Other reason	7	11	
<b>PSA &gt; 4</b>	18/167 (10.8%)	7/127 (5.5%)	.11

Note. <sup>a</sup> $\chi^2$  test. PSA = prostate-specific antigen.

information to AA men and educational efforts should involve their family members. Despite the current guideline

controversy, media coverage was more likely to make AA men want PSA testing.

AA men were more likely to believe that PCa treatment helps men live longer (94.0% vs. 88.9%;  $p = .035$ ) and if diagnosed, they were more likely to want treatment immediately (83.5% vs. 67.2%;  $p < .0001$ ). The impact of these factors on actual screening behaviors is unclear since a greater proportion, yet still a minority, of AA men indicated that they would prefer to not know if they have prostate cancer (15.2% vs. 5.9%;  $p = .001$ ). Although ultimately, the majority in both groups indicated that they wanted a PSA test done at the event, the proportion of AA men wanting the test was statistically significantly higher (98.4% vs. 95.1%;  $p = .031$ ). For the men with available PSA results, the proportions of AA and non-AA men that had a PSA > 4 ng/ml were few and not significantly different between groups (10.8% vs. 5.5%;  $p = .11$ ).

Since PSA screening recommendations are age dependent, a subanalysis of beliefs and behaviors in the men who were most likely to be eligible for screening was completed by excluding those younger than 41 years old. Men that had a personal history of PCa were excluded since their past history and treatment would likely influence their knowledge, beliefs, and behaviors. After excluding 89 men, almost half of the remaining 264 AA and 191 non-AA men reported having a PSA in the past (47.7% and 51.3%;  $p = .71$ ), and the majority in both groups reported having had a DRE (59.9% and 66.7%;  $p = .55$ ). This suggests that roughly half of the AA men most likely eligible for screening had received it. When analyzing only those potentially eligible for screening, income and the belief that PCa treatment helps men live longer were no longer significantly different between groups. In this screening eligible age group, a higher proportion of AA men had abnormal PSA (>4 ng/ml) compared to the non-AA group (13.1% vs. 5.3%;  $p = .037$ ). This suggests that the health fair screening did successfully identify at-risk men requiring further testing. Even though these men were notified of their results by event personnel, follow-up data are not available.

## Discussion

Prostate cancer is one of the most commonly diagnosed cancers and is the second leading cause of cancer mortality in men (Siegel, Miller, & Jemal, 2016). Since USPSTF recommendations were published in 2012, there has been a decline in PSA testing (Epstein et al., 2016). Although a comprehensive discussion of the USPSTF and AUA prostate cancer screening guidelines is beyond the scope of this article, there is some concern that high-risk patients are not receiving adequate screening. Patients and their families may be receiving conflicting messages and recommendations because of the controversy, changing guidelines, and general lack of consensus. The most recent AUA guidelines from 2013 recommend a shared

decision making model based on patient age and risk factors instead of widespread, routine PSA screening of asymptomatic men (Carter et al., 2013). In the current study's results reported here, the majority of men supported the notion that they should make the ultimate decision, but only after hearing their physician's opinion.

Small sample sizes limit the majority of research in minority populations. In one qualitative study by Hunter, Vines, and Carlisle (2015), 46 African American men and women shared their beliefs toward screening after listening to a PCa educational session. Poor diet, lack of regular preventative health care, poverty, and unequal treatment in the health-care system for African Americans were cited as perceived factors for higher prostate cancer risk. Most participants had knowledge of PSA testing, but were uncertain of the established guidelines and noted that health-care providers often cannot agree. Overall, the most significant barrier to screening identified in the study was a fear of side effects, such as blood in the urine from biopsy and sexual difficulties, yet in the current study, the overwhelming majority of men felt that PCa treatment was more important than potential urinary or sexual side effects. The group felt that women can help hold the men accountable to go to the doctor and share in decision making. Similar to the current study, focus group participants felt that screening can save lives and that other community members' experiences influenced their decision to be screened (Hunter et al., 2015).

In the current study, AA men were more likely to want treatment immediately for prostate cancer compared to their non-AA counterparts. Although the majority of both populations still indicated that they would rather know if they had prostate cancer, a higher proportion of AA men indicated that they would rather not know. This may be due to lack of knowledge, fear of the negative side effects associated with diagnosis and treatment, and a general mistrust of health-care systems. The study also found that the understanding of PSA testing prior to, and after reading, an information sheet was significantly lower in AA men, which may have been influenced by their comparatively lower education levels. It has already been reported that poor understanding of the disease represents a significant barrier to African Americans seeking prostate cancer screening (Reynolds, 2008). Comparatively, higher educational attainment has been significantly associated with greater rates of PSA screening among the African American population (Hararah et al., 2015). While the PSA information sheet obviously did help educate some of the men attending the health fair, this was not sufficient for 13.1% of AA men, therefore supporting the importance of shared decision making between the patient, their family and a physician.

Although AA men were less likely to use the internet for information in this study, it was still the second most

prevalent source of information reported for all races. Song, Cramer, and McRoy (2015) reported that the internet was the least relied upon source of information on prostate cancer for African American men and that health professionals, family, and friends are main sources of information regarding health issues, including prostate cancer. In the current study, most men in both groups indicated that they gained information from their health-care provider, confirming the importance of providers in educating their patients regarding appropriate screening. Since AA men indicated that family members influence their decision, PCa screening educational efforts should include both family members and health-care providers. The overall findings that AA men were less educated than others, but were more influenced by the media and relied on television for health information, suggest that television campaigns might be an effective avenue to educate African American men instead of relying on written materials. Interestingly, almost a quarter of men also indicated that health fairs were a source of information on PSA screening requirements, suggesting support for organizing educational community events such as the event providing data for this study.

The community health event data used for this study presented a unique opportunity to examine health-care beliefs in a local, large, majority AA community-based sample. According to the 2010 census, 87.2% of Detroit, MI residents were African American compared to 12.3% of the population nationally. Higher mortality rates in African American men suggest greater health-care needs, and have stimulated a large amount of research on the topic (National Center for Health Statistics, 2014). In addition, analyses of large national datasets have identified that African American men are screened for prostate cancer at a rate lower than their white counterparts, and African American men are less likely to receive potentially life-saving definitive treatment for high risk PCa (Jindal et al., 2017; Mahal et al., 2014). Clearly, there is significant room for improving the way African American men access PCa information, screening tools, and potentially effective treatment.

Previous research into African American prostate cancer screening habits has explored cultural factors that might account for their decreased screening rates. Through focus groups, Sanchez, Bowen, Hart Jr, and Spigner (2007) found several cultural themes affecting PCa screening behaviors, including limited knowledge of prostate cancer and clinical services. In particular, men viewed the DRE as a perceived threat to manhood, believed that consciously thinking about health problems might create disease or worsen symptoms, and expressed a distrust of the medical community due to the lack of agreement on screening guidelines resulting in mixed messages (Sanchez et al., 2007). Two additional themes

from the same study were encouraging of PCa screening, including a belief that PCa screening was valuable for early detection and treatment, and a strong belief in shared decision making with a health-care provider to empower men in their PCa screening decision (Sanchez et al., 2007). Furthermore, religious involvement among African Americans is predictive of having a DRE, but not PSA testing (Holt, Wynn, & Darrington, 2009). While it is not likely that all AA men share the same beliefs around PCa, these findings are important to keep in mind when considering why and how AA men might choose to get screened or not and how they might choose to do it.

Interestingly, in the current study 40.1% of the AA men age 41 or older had never had a DRE and 42.9% had never had a PSA test, but most of them chose to have a PSA test at the health fair. AA men were also more likely to have an abnormal PSA when compared to non-AA men (10.8% vs. 5.5%). Since the PCa mortality rate is higher in African American men, early detection is extremely important to minimize mortality rates. Community health workers have already been reported to improve health knowledge, change health behavior, and increase access to care in ethnic minorities (Verhagen, Steunenberg, de Wit, & Ros, 2014). Additionally, Blocker et al. (2006) reported that African American churches can play an important role in disseminating health information, and Luque et al. (2015) identified barbershops as another means to educate African American men on health topics. The current study shows that seizing an additional opportunity, the community health fair, can serve as a key tool in the implementation of focused education and awareness campaigns tailored to the beliefs and cultures of the African American population.

A key strength of this study is the participation of a large number of AA men since minorities are often under-represented in research. Also, examining PCa screening behaviors in the men most likely to be eligible according to current guidelines allowed us to expose the differences in men who will draw an immediate benefit from efforts to improve knowledge and awareness. Limitations include a lack of scientifically validated questionnaires and missing data, which limited statistical modeling, since not all attendees provided complete information. In addition, men that did and did not attend the PSA booth differed on demographic characteristics, which may introduce bias.

## Conclusion

Evaluating health-care beliefs within high risk, minority groups is a crucial first step to meeting their unique needs. The results presented here suggest avenues for educating the public, and in particular African American men, regarding current PSA testing and PCa screening guidelines,

and can help inform health-care providers as well as policy makers in an effort to improve health outcomes in high risk populations. More research is needed to confirm findings, as well as identify other factors and beliefs that may impact men's overall health.

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