

RESEARCH COMMUNICATION

Factors Affecting Prostate Cancer Screening Behaviour in a Discrete Population of Doctors at the University Hospital of the West Indies, Jamaica

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Abstract

To determine the knowledge, attitudes and practices of Jamaican male medical consultants regarding prostate cancer screening in three departments within the University Hospital of the West Indies. The research design was a cross-sectional quantitative survey utilising a self administered questionnaire. All 36 male consultants between 40 and 70 years from the Departments of Surgery Radiology Anaesthesia and Intensive Care, Obstetrics and Gynaecology/Child Health, and Medicine participated in the survey. Bivariate analyses were used to determine the relationship between the three constructs with $P < 0.05$ taken as statistically significant. The majority (97%) of the respondents were aware that prostate cancer among Jamaicans account for one of the highest incidences in the world and 85% believed that screening for prostate cancer should begin at age 40 years. Approximately two-fifths (44.4%) reported that they usually encourage their patients to be screened. Nearly all (97%) of the respondents agreed that performing both the prostate specific antigen (PSA) test and digital rectal examination (DRE) are more effective in assessing for the presence of prostate cancer. Just over one-third (36%) found the DRE embarrassing and 41% had never had a DRE. The results showed a significant positive correlation ($r = 0.374, P = 0.032$) between knowledge and attitude, and an even stronger correlation between attitude and prostate cancer screening practice ($r = 0.395, P = 0.025$). However there was no direct correlation between knowledge and practice. Physicians' knowledge of prostate cancer does not predict their personal prostate cancer screening behaviour. Knowledge of prostate cancer is not enough to result in screening behavior of men in Jamaica.

Keywords: Prostate cancer - screening behaviour - doctors - Jamaica - university environment

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Introduction

Prostate cancer is a major health care problem in Jamaica with an annual incidence of 65.5/ 100,000 men/year making it the most common cancer affecting Jamaican men, accounting for 30.3% of incident cancers (Gibson et al., 2002). It is also the most common cause of male cancer – related deaths accounting for 16.5% of cancer total cancer related deaths (Blake et al., 2002). It is one of the commonest malignancies worldwide, with high incidence and mortality rates reported in certain black populations of Africa and the Caribbean (Pisani et al., 1990). Despite recent advances in diagnosis, staging and treatment, prostate cancer remains the second most common cause of cancer-related death in American men older than 45 years (Jemal et al., 2005). African-American men suffer disproportionately from the disease, having a 50% higher incidence and a two-fold greater mortality than Caucasian men (Johnson et al., 2001).

Physicians' recommendation is perhaps the most

powerful factor in promoting screening compliance (Smith et al., 1997; Nivens et al., 2001). Educational programs may improve men's overall knowledge of prostate cancer and increase screening in Caribbean countries like Jamaica where prostate cancer continues to be a major healthcare issue (Pendleton et al., 2007). However, other factors must be taken into account when addressing prostate cancer screening rates. One such factor is the health care provider's knowledge and attitude toward prostate cancer screening. A number of studies have investigated physicians' knowledge of prostate cancer screening (Morris and McNoe, 1997; Ward et al., 1998; Fowler et al., 2000). However, to our knowledge, there is no similar study examining medical practitioners in Caribbean countries.

This study therefore explored the knowledge, attitudes and practices of Jamaican male medical consultants regarding prostate cancer screening in three departments at the University Hospital of the West Indies using a cross-sectional design.

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Subjects and Methods

A cross sectional quantitative survey utilising a self administered questionnaire constructed by the authors, was performed to determine the knowledge, attitudes and practices relating to screening for prostate cancer among male medical consultants from three departments of the University Hospital of the West Indies. Only male medical consultants between 40 and 70 years were eligible for inclusion in the study. The study population consisted of 42 male consultants between 40 and 70 years drawn from the Department of Surgery, Radiology, Anaesthesia and Intensive Care; Obstetrics, Gynaecology and Child Health; and Medicine at the University Hospital of the West Indies. Of the 42 consultants within the sample frame, 36 (86%) participated in the study. The questionnaire was piloted on 3 individuals prior to initiation of the study and was found to be suitable as constructed.

Questionnaires were constructed to obtain information on physician's knowledge of prostate cancer, attitudes towards screening and actual practices. The questionnaire comprised 39 questions. Each question was assigned a preset code to facilitate data entry and analysis. Independent demographic variables chosen were age, practice, speciality, family history and marital status. Other explanatory variables related to the level of the respondents' knowledge and attitudes towards prostate cancer. The dependent variable was the personal practice of prostate cancer screening.

The research proposition is that knowledge about prostate cancer leads to a more positive attitude and ultimately better practice habits related to prostate cancer screening. Uni-dimensional scales were used to represent each of these constructs: knowledge about prostate cancer ranged from high to low, attitude towards prostate cancer self screening practice ranged from positive to negative and prostate cancer self screening practice ranged from active to inactive. Questionnaire items were designed to be indicators of one of these constructs. In several cases, variables were "reverse scored" in order to maintain directional consistency in the response scales. A scale of 1 to 5 was chosen, with 1 represented the low end of the scale to enable one to combine several variables into an aggregate score for each construct in order to test the hypothesized relationships.

Informed consent was obtained and participants' confidentiality maintained by using a unique patient identification number to identify all records. Questionnaires were prepared and then administered over two months February and March, 2007 with the assistance of trained research assistants.

Data Analysis

Data obtained from questionnaires were analysed by two statistical methods. Univariate analysis was conducted along with frequency distribution. Bivariate analysis was performed to determine the relationships between the variables of interest, and the hypotheses tested using simple correlation analysis. The two testable/principal hypotheses were: H1: People that are more knowledgeable about prostate cancer are more likely to display a positive

Table 1. Knowledge and Awareness of Prostate Cancer Screening among Respondents

	Number	Percentage
Jamaicans has one of the highest incidence of PC		
Aware	35	97.0
Not aware	1	3.0
Normal range for PSA is 0 - 4 ng/ml		
Agree	28	78.0
Disagree	2	5.0
Other	6	17.0
Screen for PC regardless of presence of urinary symptoms		
Agree	31	86.0
Disagree	5	14.0
PSA and DRE methods are effective in screening for PC		
Agree	35	97.0
Disagree	1	3.0
Encourage patients to do prostate examination		
Always	5	18.0
Usually	13	46.0
Occasionally	10	36.0
Informed if diagnosed with prostate cancer		
Yes	23	81.0
No	3	11.0
Neutral	2	8.0
Feared being told that test results were positive		
Yes	11	39.0
No	17	61.0
Fear of DRE examination		
Yes	3	11.0
No	25	89.0
DRE examination is intrusive		
Disagree	7	25.0
Agreed	14	50.0
Strongly agreed	2	7.0
Undecided	5	18.0
Prostate cancer screening is necessary		
Yes	23	82.0
No	1	4.0
Non-committal	4	14.0
Cost of Prostate cancer screening is prohibitive		
Agree	5	18.0
Disagree	16	57.0
No knowledge	7	25.0

attitude towards cancer screening practice; H2: People with a more positive attitude towards prostate cancer screening are likely to exhibit good habits in the practice of prostate cancer screening.

To facilitate this analysis, a common data reduction technique was employed (principal components analysis) to aggregate related indicator variables into a single score for the constructs of interest (i.e. knowledge, attitude, practice). The Statistical Analysis System (SAS) programme was used to conduct the principal components

Results

Demographic characteristics

Approximately one-third (31%) of the respondents were in the age range of 40-44 years; 11% in the age range of 60 year and older. The majority (91%) of the respondents were married. Almost two-thirds (58%) of the respondents reported that screening for prostate cancer should begin at age 40 years; while 8% at 55 years.

Table 2. Practice of Prostate Cancer Screening

	Number	Percentage
Routine prostate cancer screening in last 12 months		
Yes	12	33.0
No	24	67.0
Abnormal prostate cancer screening finding		
Yes	2	6.0
No	31	83.0
No response	3	11.0
Pre PSA counseling should be done		
Yes	33	91.0
Non-committal	3	9.0
Frequency of DRE examination		
1- 2 years	6	16.0
>2 years	16	43.0
None	14	41.0
Frequency of PSA test		
< 1 year	2	6.0
1 - 2 years	11	30.0
>2 years	9	25.0
None	14	39.0
Frequency of PSA test and DRE examination		
1 - 2 years	5	15.0
> 2 years	10	29.0
None	19	56.0

Table 3. Correlations among Knowledge, Attitude and Practice

	Knowledge	Attitude	Practice1	Practice2
Knowledge	1.000	0.374*	-0.243	0.127
Attitude	0.374*	1.000	-0.145	0.395*
Practice 1	-0.243	-0.145	1.000	0.021
Practice 2	0.127	0.395*	0.021	1.000

*Indicate statistical significance with $p < 0.05$.

None of the participants thought that screening should begin at age 35 years. A family history of cancer existed among 33% of the respondents, and of these 12 medical consultants, 5 (41%) had primary relatives diagnosed with prostate cancer.

Knowledge and awareness of prostate cancer screening

More than one-half (58%) of the respondents disagreed that the likelihood of developing prostate cancer was low if there was no family history of the disease. Almost all (97%) of the respondents were aware that prostate cancer among Jamaicans account for one of the highest incidences of the disease in the world and that prostate cancer is highest among men of African descent residing in the Western Hemisphere (Table 1).

More than three-quarters (78%) of the respondents confirmed that the accepted range of normality for prostate specific antigen (PSA) examination was 0-4 ng/ml. The majority (86%) of respondents agreed that screening should be done regardless of the absence of urinary symptoms. With regard to combining the PSA test and DRE examination, 97% of the respondents agreed that both were more effective in assessing for the presence of prostate cancer; 64% believed that an abnormal finding in either meant that a biopsy was necessary (Table 1).

Attitude towards prostate cancer screening

In assessing respondents' attitudes towards encouraging their patients to have screening done, consultants from the Departments of Obstetrics, Gynaecology and Child Health were excluded. Just under one-fifth (18%) of the respondents always encouraged their patients to have a prostate examination; 36% did this occasionally (Table 1).

The majority (81%) of the respondents would prefer to know that they had prostate cancer if diagnosed; 39% of respondents feared being told that their test results were positive. Of the responses given by those who expressed fear of being tested for prostate cancer, the following reasons were specified: fear of pain 7%, fear of side effects 10%, fear of impotence 10%, fear of incontinence 7%, all of the above 7% and 59% could not decide.

With regards to DRE, 89% of respondents had no fear of having a DRE done and 36% found it embarrassing. Just under one-fifth (25%) of the respondents disagreed that the DRE examination was intrusive, while 50% agreed. One-third of the respondents did not prefer having a female perform DRE, 56% were indifferent while 11% preferred having a female perform the DRE.

The majority (82%) of respondents believed that screening for prostate cancer was necessary even though most persons died with it rather than from it. Less than one-fifth (18%) of respondents agreed that the cost of screening was prohibitive while 57% mentioned that the cost of screening was reasonable. Regarding the usefulness of a men's health program in reducing the incidence of advanced prostate cancer in Jamaica, 78% agreed that this would be useful while another 8% disagreed.

Practice of prostate cancer screening

In terms of the practice of prostate cancer screening, 33% of the respondents reported that they had visited a doctor within the last twelve months, 82% of them did so as a routine visit, and 18% visited due to emergencies and other reasons. Two-thirds (66%) had never had a routine physical examination. Of the 33% of the respondents that had visited the doctor in the last twelve months, 36% reported having only a PSA done while only 9% had both a PSA and DRE done (Table 2). Eighty-three percent of the respondents have never had an abnormal screening report while 6% have had an abnormal report. Regarding the issue of the benefits of pre-PSA counselling, 91% of the respondents agreed.

In terms of the DRE, 16% had yearly to two yearly examinations, 43% had DRE's done at intervals greater than two years, and 41% had never had a DRE. Just 6% of the respondents have had PSA tests done at less than yearly intervals while 39% have never had a PSA test done. Regarding the combined PSA test and DRE, 15% had yearly to two yearly examinations and 56% of the respondents had never had both PSA test and DRE done.

The results show a significant positive correlation ($r = 0.374$) between knowledge and attitude ($P = 0.032$), and an even stronger positive correlation ($r = 0.395$) between attitude and prostate cancer screening practice ($P = 0.025$; Table 3). There was a significant positive correlation between age and prostate cancer screening practice ($r = 0.445$; $P = 0.020$).

Discussion

There was a significant correlation between knowledge of prostate cancer and a positive attitude to cancer screening. The majority of the medical consultants interviewed had knowledge of the disproportionately high incidence of prostate cancer in men of African descent and thought that prostate cancer screening was necessary. In addition, most of the medical consultants believed that screening for prostate cancer should be done regardless of the presence of urinary symptoms. Previous researchers have demonstrated that physician knowledge of specific disease process greatly influenced screening behavior (Philips et al., 2005; Smith et al., 2006). Pendleton and colleagues (2008) surveyed a diverse group of primary care physicians assessing their contemporary knowledge and screening attitudes for prostate cancer. They found that the mean correct score on the knowledge questions was 59%. Primary care physicians were less likely to know that PSA has a poor specificity, localized prostate cancer generally does not present with any symptoms and to distinguish treatment for localized therapies compared to therapies directed towards advanced disease (Pendleton et al., 2008).

More than one-half of the medical consultants believed that screening should begin at age 40 years while just over one-quarter thought it should begin at age 45 years and less than one-tenth, at age 50 years and above 55 years. Furthermore, just below one-fifth always encouraged their patients to have a prostate examination and approximately four-tenths reported that they usually encourage their patients to be screened. However just under two-fifths occasionally encourage their patients to undergo prostate cancer screening. Both the American Cancer Society and the American Urologic Association recommend considering screening for prostate cancer under appropriate conditions for men aged 50 years and over (Bahnsen et al., 2000). The American Cancer Society (2007) recommends annual PSA test and DRE for African American men beginning at age 45 (American Cancer Society, 2007). In a study of African American men, of those in the 39-49-year-old age group who were in for their check-up in the last 12 months, 78.8% had not been told to have a PSA, and 75.8% had not been told to have a DRE. In the 50-59-year-old age group, 55.3% had not been told to have a PSA, and 69.7% had not been told to have a DRE (Woods et al., 2006). In light of the above findings, reasons why physicians do not recommend prostate cancer screening may be due to several factors, ranging from lack of prospective randomized trials demonstrating the benefit of screening, to misconceived notions on prostate cancer screening and treatment, and outdated knowledge of prostate cancer screening and treatment (Bell et al., 2006).

The study showed a significant positive correlation between knowledge and attitude and an even stronger positive correlation between attitude and prostate cancer screening practice. Knowledge seemed to have impacted on attitudes towards screening and this may be explained by the fact that the target group is composed of highly trained medical practitioners who have all engaged in extensive academic pursuits. The majority of the

medical consultants did not fear the DRE examination and would like to be informed if they were diagnosed with prostate cancer. Furthermore, approximately two-fifths of the medical consultants feared being told that their test result was positive. Of the responses given by those who expressed fear of being tested for prostate cancer, the reasons were fear of pain, fear of side effects, fear of impotence and fear of incontinence. Predictors of prostate cancer screening among African American men that have been documented in the literature are income, age, marital status and perceived barriers (Shelton et al., 1999). Shelton and colleagues (1999) suggested that fear and embarrassment have prevented many Black men from seeking screening. Wood and colleagues (2006) found that in a study of African American men, the majority of respondents identified fear-related barriers such as fear of cancer problems, fear of cancer treatment, fear of sexual dysfunctions and fear of a cancer diagnosis. Barriers related to internal locus of control toward health included a lack of awareness for the need to be screened, not going to the medical doctor, denial of self-risk and a fatalistic perspective toward prostate cancer. Clarke-Tasker and Wade (2002) further established that even though African American men understood the importance of early detection they still had concerns about the effects on their sex life if they were diagnosed with cancer. These concerns may lead to procrastination or the decision not to have screening. However, at least one study has shown that fear of impotence was not a significant barrier to screening (Weinrich et al., 2000).

The physician's aggressive, positive engagement in shared decision-making is highly predictive of black men making an informed decision to have the PSA test and DRE (Krupat et al., 2001; Kravitz and Melnikow, 2001). Just under one-fifth of the medical consultants encouraged their patients to have a prostate examination while just below one-half usually do so. Woods et al. found physician's message to significantly predict PSA and DRE among African-American men (Woods et al., 2006). When the physician's engagement is surrounded by social influences promoting a clear prostate cancer prevention message targeting black men, there is a strong possibility he will participate in screening. With regards to the combining of the PSA test and DRE, the majority (97%) of the medical consultants in this study agreed that this dual approach would be a more effective means of assessing the presence of prostate cancer. An Australian survey found that 68% of general practitioners recommended a combination of DRE and PSA effective for prostate cancer screening (Ward et al., 1998). A New Zealand survey found that 40% of general practitioners believed that all men aged 50 years or over should be screened using DRE, PSA or both, and over 80% of these doctors screened at least some of these patients with these tests (Morris and McNoe, 1997).

Regarding prostate cancer screening practice, only one-third of the medical consultants visited their doctor within the last 12 months, and just under two-fifths of those who visited had a PSA test performed. Further, whilst most of the medical consultants had no fear of having the DRE done, just under two-fifths found it embarrassing and one-

half found it intrusive. Approximately two-thirds did not have a DRE performed on a regular basis and the same proportion has never had a DRE done. In terms of a PSA test, three-tenths had yearly to two yearly examinations, and one quarter had PSA done irregularly. It is important to note that approximately two-fifths of the respondents had never had a PSA test and just over one-half had never had PSA test and DRE done together. In a study of African American men, Woods et al. observed a negative effect with black men initiating a routine prostate cancer screening with the DRE. Men expressed that they simply "did not like the rectal exam" and feared the outcomes of interventions to treat prostate cancer (Woods et al., 2006). The study also reported that 75.4% of the men indicated they were uncomfortable having a rectal exam, however, 61.2% reported taking the DRE compared to the PSA (45.7%) even though they expressed a dislike for the DRE. Further, there was a strong positive association between the physicians' relationship with their black male patients and the decision to have a PSA or DRE (Woods et al., 2006).

Our study has several limitations. First, this was a small pilot study to determine baseline prostate cancer knowledge and attitudes and patterns for prostate cancer screening in medical consultants at an academic institution. Therefore, a larger sample size is needed for further investigation which could be extended to the general practitioners in Jamaica. Therefore, this small cohort may not represent medical practitioners throughout the country. Furthermore, responders of the questionnaire may have polar views on prostate cancer screening.

In conclusion, our findings did not demonstrate that physicians' knowledge is an important predictor of their prostate cancer screening behaviour. Thus, this study raises the possibility that factors other than educational programs must be assessed as a means to increase screening of men in Jamaica. Physician and patient interaction is important for prostate cancer screening. There should be an open discussion on patient values relative to prostate cancer screening by both physician and patient. With shared decision-making, Jamaican men may be empowered to make a choice relative to prostate cancer screening.

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