Association of physicians' knowledge and behavior with prostate cancer counseling and screening in Saudi Arabia

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ABSTRACT

الأهداف: التحقق من مدى المعرفة، والقدرات السلوكية، والممارسات الطبية التي يمتلكها أطباء الرعاية الأولية أثناء تقديم المشورة لمرضى سرطان البروستات وإجراء الفحوص اللازمة لهم.

الطريقة: أجريت هذه الدراسة المقطعية في مركز الأميرة الجوهرة آل إبراهيم لأبحاث السرطان بجامعة الملك سعود، الرياض، المملكة العربية السعودية وذلك خلال الفترة من مايو إلى أكتوبر 2009م، حيث تم توزيع استبياناً ذاتياً على جميع أطباء الرعاية الأولية المرخص لهم في الرياض. لقد تم الحصول على المعلومات المطلوبة من 204 طبيباً ممن قاموا بالإجابة على أسئلة الاستبيان الذاتي والتي كانت تشمل ما يلي: الممارسات المتبعة أثناء الفحص، ومدى معرفة الأطباء بسرطان البروستات، وقدراتهم السلوكية أثناء الفحص الكشفي عن السرطان، بالإضافة إلى مدى ميل الأطباء نحو التعليم الطبي المستمر حول سرطان البروستات. ولقد تم أيضاً جمع صفات الأطباء الذين شملتهم الدراسة.

النتائج: أشارت النتائج إلى أن حوالي 54.7% من أطباء الرعاية الأولية كانوا يقومون بتقديم المشورة وتحويل مرضى سرطان البروستات. ولقد وصل متوسط الإجابات الصحيحة في اختبار المعرفة إلى 54.3%، غير أن قدرات الأطباء السلوكية لم تكن مناسبة. لقد اتفق حوالي 70% من الأطباء على جملة واحدة وهي مدى أهمية الفحص الكشفي، إلا أنه تم التشكيك في أهمية الفحص الشرجي وأهمية تحليل مولدات الأجسام المضادة الخاصة في البروستات. يمتلك أطباء الرعاية الأولية ثقة بالنفس وقدرة على تحديد مرضى سرطان البروستات وتحويلهم من أجل المعاينة، غير أنهم غير قادرين على التعامل مع المرض ومعالجته.

خاتمة: أشارت الدراسة إلى أن المعرفة والقدرات السلوكية الصحيحة هي من أهم العوامل التي تحدد شخصية الطبيب، فقيام الطبيب بالفحوص والإجراءات اللازمة للكشف عن المرض يجب أن ترتكز على المعرفة السابقة التي يمتلكها وهذا من شأنه تعزيز كفاءة الطبيب وتطوير قدراته السلوكية أثناء التعامل مع المرض.

Objectives: To investigate the knowledge, attitudes and practices of primary care physicians towards prostate cancer counseling and screening.

Methods: This cross sectional study was conducted in May 2009 to October 2009 through a survey questionnaire, which was distributed to all licensed primary care physicians in Riyadh, Saudi Arabia. The study took place in the Princes Al-Johara Al-Ibrahim Center for Cancer Research, King Saud University, Saudi Arabia. Data was obtained from 204 primary care physicians using self-reports of prostate cancer screening practices, knowledge, attitudes towards prostate cancer screening, and continuous medical education preferences. Respondents' characteristics were also collected.

Results: Approximately 54.7% of the respondents were practicing counseling and referring prostate cancer patients. The mean correct knowledge score was 54.3%, their attitude was not strong; the only statement that approximately 70% of physicians agreed upon was about the value of screening, however, the reliability and evidence to support digital rectal examination and prostatic specific antigen were in question. Our primary care physicians had self-confidence in suspecting and referring high-risk patients for screening, but not for management and treatment.

Conclusion: Knowledge and attitude were found to be the most significant predictors that determine physicians' self practice. Physicians' practice towards a screening procedures or early detection of diseases should rely on a good background of information, which in turn enhances their self-efficacy and develops a good and positive attitude towards their practice skills.

Prostate cancer (PC) is the second leading cause of cancer death nationwide for men over age 60 years. Currently, there is no scientific consensus on effective strategies to reduce the risk of PC.[1] Additionally, there is no agreement on the effectiveness of screening or that the potential benefits outweigh the risks.[2] Moreover, treatment decision-making in men newly diagnosed with PC is difficult due to the options for treatments, each with similar benefits, and possible side effects that are potentially difficult.[3] Given these uncertainties, the principal public health approach is to support informed decision making about screening and treatment options. Public health agencies are recommending that physicians and patients should reach a decision on screening collaboratively via shared decision making.[2-5] This allows patients to be informed of the benefits and risks of PC screening, treatment, and to include their own values and preferences in the process. Both screening and treatment decisions for PC are complex and require a physician with extensive experience. Obviously, it is very important for the PC patient, his family, and those at risk that they feel comfortable when they have found a physician who is experienced in PC counseling, screening, and treatment.[6] The primary health care sector is an under-utilized resources for medical education. Primary care physicians play an important role in cancer care and screening, but relatively little is known about its PC knowledge, practice, and training.[7] Physician surveys revealed that different doctors have different beliefs and practices about PC screening and counseling.[8-10] Chan et al[9] found that physicians do not agree on the facts that men need to know and to make an informed decision on PC screening. The attitudes, confidence, and beliefs that physician's hold might be important determinants of their screening and management behavior for PC. In Saudi Arabia, physician's attitudes, knowledge, and beliefs about PC screening, have never been examined. Understanding these perceptions will help identify continuous medical education (CME) training of physicians. This will guide an effective CME program about PC counseling and decision making that could be integrated into primary care prevention. Therefore, this study aimed to assess physicians' educational needs for CME through investigating their knowledge, attitudes, beliefs, perception of self-efficacy, and screening practices concerning PC.

Methods. A cross-sectional descriptive study was conducted in the city of Riyadh (the capital of Saudi Arabia) during the period May to October 2009, where the second highest prevalence of cancer prostate exists. All primary health care physicians were invited to participate in the study. The survey questionnaire was sent to Physicians in different institutions, University hospitals, Army hospitals, Ministry of Health hospitals and King Faisal Specialized Hospital representing different health sectors in the city. The study was approved by the Research Ethics Committee of the Princes Al-Johara Al-Ibrahim Center for Cancer Research, King Khalid University Hospital, King Saud University, Riyadh, Kingdom of Saudi Arabia.

A self-administered structured English questionnaire was prepared. Its content validity was confirmed through an extensive literature review and experts specialized in urology, public health, health education, and behavioral sciences. It included the following information:

(i) Personal data: age, gender, years of experience, nationality, and specialty.

(ii) Continuous medical education data: physicians' previous training in PC, perceived needs of further training in PC, suggested topics for such training and preferred sources to get information about PC.

(iii) Characteristics of PC screening and counseling practice: Eight questions were used to assess the time devoted in PC screening and counseling practice, percentage of patients suspected, and referral for prostatic specific antigen (PSA) reasons for PC screening and counseling practice with asymptomatic patients, issues discussed during PC counseling, rate of their skills in PC screening and counseling practice, and resources used to get information on PC.

(iv) Physicians' knowledge about PC: This scale comprised 29 questions that examined knowledge regarding function of prostate; lifetime risk for developing PC; PC risk factors, screening and prevention. For each question the correct answer was given a score of one and incorrect answer was given zero. Blank responses were coded as wrong responses. All scores were summed up to attained the total knowledge score, which ranged from 0-29.

(v) Physicians' attitudes towards PC screening and counseling practice: A scale of 9 items was designed as 3 points Likert scale (agree, neutral, disagree) to ascertain physicians' attitude toward accuracy and evidence supporting screening as well as their role. For each item, the response was scored from 1-3 with a higher score for more favorable attitude toward PC screening and counseling practice.

(vi) Physicians' self-efficacy beliefs about PC screening and counseling practice: this scale was adapted from a published self-efficacy scale.[11] It included

10 common/difficult situations to assess physicians' confidence in their ability to participate in PC screening and counseling practice (for example, to suspect PC cancer from the patient story, to counsel patients in the benefits of PSA) and PC management (for example, to make suitable options for treatment of PC patients, to manage the complications of PC, and its treatment). Each item was rated on a 10-point Likert scale ranging from 0 (not at all confident) to 10 (very confident). The total scale score can range from 0-100, with higher scores indicating stronger perceived self-efficacy in PC screening and counseling practice.

Statistical analysis. Data was processed and analyzed by SPSS, version 17. Analysis of variance test and t test were used as tests of significance. The level of significance used was at *p* value <0.05. For testing internal consistency of different scales, Chronbach reliability test was used: it was 0.93 for self-efficacy, 0.65 for attitude scale, and 0.75 for knowledge scale. Logistic regression was used to explore the effect of different factors predicting the physicians' practice towards PC counseling and screening, the dependent variable was physicians' referral versus non-referral.

Results. Out of the 405 primary health care physicians surveyed, 204 returned the questionnaire, giving a response rate of 50.3%. Fifty-six questionnaires were excluded due to incomplete answers. Only 148 respondents returned completed questionnaires. The mean age was 41.35± 8.83 years (range, 25-60 years), and 21 (14.2%) were non-Arabic speakers. The mean years of experiences was 3.61± 1.37 years.

One hundred and thirty-three (89.9%) respondents had no CME in PC. The mean score of their perceived need for further CME in PC was 3.2 ± 1.15 (actual range = 0-5). The most frequently cited preferred as a source of information for PC was Web (69.6.%), followed by CME courses (48.6%), textbooks (41.2%), and peer reviewed journals (29.1%). The present study revealed that nearly half of the respondents (54.7%) were counseling, screening and sometimes referring PC patients, the main reasons were the age of the patient; being >50 (35.8%), family history (31.8%) and upon patient's request (23.3%). Along a scale from 1-4, it was found that the respondents had moderate perceived relevancy of PC screening and counseling practice to their work (x^2=3.07 which is just above 2.5, the midpoint of the scale). They estimated their skills in PC counseling and in digital rectal examination (DRE) and PSA testing as less than moderate (x^2=2.5), which is less than midpoint of the scale.

Primary health care physicians' knowledge about PC. The mean total knowledge score was 15.72 with the actual range (0-29). Regarding different knowledge items, the majority of the respondents knew that age above 50 years, family history, black race, and tobacco smoking are risk factors of PC. The least known risk factors were high fat diet and obesity (50%), and multiple sex partners (20.9 %). The most frequent medical problems that make PHC physicians recommend PC screening were weak urinary stream, and hematuria; meanwhile the least mentioned were painful ejaculation, and erectile dysfunction (**Table 1**). Function of the prostate, normal value of PSA for male under 60 years old, and the PC routine screening are summarized in **Table 1**.

Also, 79.1% and 68.9% knew that PSA and DRE are used for routine PC screening. Uncertainty about nutritional knowledge was evident among PHC physicians. In general, in terms of percentage, the mean correct knowledge score was 54.3%, **Table 1**.

Primary health care physicians' attitude and perceptions about PC screening and counseling. As shown in **Table 2**, the mean total attitude score was

Table 1 - Distribution of the primary health care (PHC) physicians by their correct knowledge about prostate cancer (PC) and prostate cancer screening (N=148).

Knowledge items	N	(%)
Risk factors		
Age below 50 years (F)	128	(86.5)
Family history	121	(81.8)
White race (F)	111	(75.0)
Tobacco smoking	107	(72.3)
High fatty diet and obesity	74	(50.0)
Number of man's sexual partners	31	(20.9)
Medical problems to recommend PC screening		
Weak urinary stream	120	(81.1)
Hematuria	106	(71.6)
Blood in semen	98	(66.2)
Family history	97	(65.5)
Starting & stopping while urinating	89	(60.1)
Frequent pain or stiffness in the lower back	88	(59.5)
Increased urinary urgency	86	(58.1)
Increased urinary frequency	75	(50.7)
Nocturia	61	(41.2)
Painful ejaculation	59	(39.9)
Erectile dysfunction	46	(31.1)
Function of the prostate	88	(59.5)
Normal value of PSA for a man under 60 years	102	(68.9)
PC routine screening		
PSA	117	(79.1)
DRE	103	(69.6)
Transrectal ultrasound	44	(29.7)
Can false positive PSA test occur	129	(87.2)
Nutrients recommended for prevention of PC		
Selenium	23	(15.5)
Vitamin E	48	(32.4)
Green tea	34	(22.9)
Low fat diet	88	(59.5)
Vitamin D	8	(5.4)
Beta carotenes	33	(22.3)
PSA - prostatic specific antigen		

Table 2 - Primary health care (PHC) physicians' attitudes towards prostate cancer (PC) counseling and screening practice.

Attitude statements	Agree %	Mean (range 1-3)	SD
1. Early detection through screening can improve survival for men with PC	71.6	2.62	0.65
2. PCC&S should be routinely used on all men beginning at age 50	43.2	2.22	0.77
3. DRE is an accurate screening test for prostate cancer	16.2	1.85	0.67
4. There is evidence to support using DRE for PC screening on asymptomatic men with no risk factors	20.3	1.80	0.75
5. DRE is unaccepted from Saudi men, so physicians should avoid it	8.1	2.51	0.64
6. PSA is an accurate screening test for prostate cancer	27.0	1.91	0.79
7. There is enough evidence to support using PSA for PC screening on asymptomatic men with no risk factors	17.6	1.66	0.76
8. It is more appropriate for specialists to screen for PC	10.8	2.64	0.67
9. I think that PSA testing leads to excess subsequent unnecessary investigations	29.7	2.04	0.79
Total attitude score (actual range 9-27)		**19.25**	**2.97**

DRE - digital rectal examination, PSA - prostatic specific antigen, PCC&S - prostate cancer counseling and screening

Table 3 - Primary health care physicians' self-efficacy regarding prostate cancer (PC) counseling and screening (PCC&S).

Rate your confidence in your ability to perform the following	Mean (0-10)	SD
1. To provide effective counseling of asymptomatic men on PC	5.33	3.03
2. To follow up PC high risk patients	5.41	3.07
3. To detect PC from the patient history	6.35	2.78
4. To refer PC high risk patients for screening	7.08	2.79
5. To examine the prostate by DRE	5.09	3.35
6. To detect palpable abnormalities of the prostate during DRE	5.05	3.25
7. To find suitable options for treatment of PC patients	4.36	3.07
8. To be successful in managing PC patients	3.88	3.00
9. To manage the complications of PC and its treatment	3.55	2.91
10. To counsel patients in the benefits of PSA	5.92	3.17
Total self efficacy score (actual range= 0-100)	**52.01**	**23.85**

DRE - digital rectal examination, PSA - prostatic specific antigen

19.25, which was slightly higher than midpoint (18) of the actual range of that score (9-27). For different attitudinal statements, "It is more appropriate for specialists to screen for PC" had got the highest favorable mean score (2.64), which delineates that, the majority of PHC physician accepting PC screening and counseling practice to be their role. Also, most of them had favorable attitudes towards "early detection through screening can improve survival for men with PC" (x^2=2.62). The least favorable attitude scores were for the reliability and accuracy of digital rectal examination (DRE) and PSA testing. The mean total self-efficacy score was 52.01, which was around the midpoint of the actual range (0-100), as demonstrated in **Table 3**. The statements with the highest mean scores (x^2=7.08 and x^2= 6.35) were "to refer PC high risk patients for screening" and "to suspect PC from the patient story", respectively. This indicates PHC physicians

felt self-efficacious regarding suspecting and referral of PC patients. PHC physicians felt least efficacious (x^2= 3.88, x^2= 3.55) as regard "to be successful in managing PC patients" and "to manage the complications of PC and its treatment", respectively. The results of the final model of logistic regression is presented in **Table 4**, it appears that total knowledge score and total attitude score were the most significant variables that could predict physicians' practicing towards PC screening and counseling practice, while self-efficacy had a border line significance.

Discussion. The current controversy surrounding screening suggests that physicians need to be up-to-date on recent PC guidelines for counseling and screening. The decision to actually provide screening appears to be influenced by factors related to physicians, patients, and screening guidelines. It has been suggested that family

Table 4 - Determinants of physicians' practice towards prostate cancer counseling and screening.

Variables	B	SEM	Odds ratio	95% Confidence interval	
				Lower	Upper
Total knowledge score	-0.138	0.048	0.87	0.79	0.95
Total attitude score	-0.183	0.071	0.83	0.72	0.95
Total self-efficacy score	-0.011	0.009	0.98	0.97	1.002
Years of experience	0.07	0.144	0.93	0.70	1.25
Previous CME in PC	0.69	0.67	1.99	0.73	7.45

DRE - digital rectal examination, PSA - prostatic specific antigen,
B - beta, SEM - standard error of mean

physicians[12] and physicians in community settings[10] are more likely to screen using PSA. It was found that physicians who were influence by scientific evidence were more likely to practice informed decision making with their patients particularly primary health care physicians who are more likely to believe that men need to know facts about uncertainties of PSA testing to make such decision.[13] Nearly half of the physicians (54.7%) in the present study were practicing PC screening and counseling practice, their mean correct knowledge score was 54.3% and their attitude towards PC screening and counseling practice in the current study was not strong; where the only statement that nearly 70% of physicians agreed upon was about the value of screening, however, the reliability and evidence to support DRE & PSA were in question. Also, <50% agreed that prostate screening should be routinely performed on all men beginning at age 50 years. An interesting finding which should be addressed; that despite the majority of respondents hold a strong belief that PC screening and counseling practice is mainly their role, their practice towards in counseling, screening and/or referral was poor. The results of Curran et al[14] suggested that the vast majority of primary care physicians in Newfoundland and Labrador screen asymptomatic male patients for PA, and they had very positive attitudes towards prostate screening, where most of them agreed that prostate screening should be routinely performed on all men beginning at the age of 50 years and that early detection with screening can improve survival for men with PA.[14] Of the primary care physicians surveyed in Cincinnati, Ohaio, 54.9% reported using the test often or always.[15] Not surprisingly, a positive attitude toward the PSA test in PC screening was a strong direct predictor of use, in addition to physician knowledge and beliefs, which were found to be strong correlates of reported PSA test use.[15] On the other hand, Pendelton et al[16] found that the mean correct score on the knowledge questions was 59%, only 52% of physicians in that study reported routine screening in minority men and that physicians' knowledge is not an important predictor of their screening behavior.

Our primary care physicians had sound self-confidence in suspecting and referring high risk patients for screening, but not for management and treatment. Similar results were reported by Curran et al[14] where they found that physicians in their study sound confident, and had self-efficacious regarding suspecting and referring patient for screening, yet this self-efficacy was the least concerning treatment and management of PC patient and approximately 50% of the respondents to the survey reported confidence in their ability to detect PA.

Self-efficacy has a strong impact on human behavior and in physician's practice behavior. Physicians who believe it is not important to their own practice to screen for cancer risk might be less likely to do so. When physicians are lack of confidence in their ability to screen patients for cancer, even when they believe in the importance of such screening, they might be more hesitant to do so.[17] Our results implied that knowledge and attitude were the most important significant predictors of physicians' practice of PC screening and counseling practice, in addition to self-efficacy, which had a border line significance, which came in accordance with previous researchers revealed that physician knowledge of specific disease process greatly influenced screening behavior;[18-20] and a positive attitude towards screening can be a significant predictor of ordering or performing such screening tests.[18,21,22]

The main limitations of this study are related to the results being of a self-reported nature, which carries the risk of disclosure bias, yet and it represent the opinions of physicians from different institutions and sectors distributed all over the city. However, the results of the present study support the fact that physicians' practice towards a screening procedures or early detection of diseases should rely on a good background of information, which in turn enhances their self-efficacy and develops a good and positive attitude towards their practice skills. Further research should be undertaken to recognize how to assist men make informed decisions about prostate cancer testing.

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Related topics

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