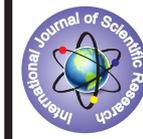


## Prostate Cancer Awareness Among Male Population in Eastern Saudi Arabia



### Medicine

**KEYWORDS:** Prostate; awareness; male; prostate cancer

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### ABSTRACT

**Introduction:** The general population awareness level of medical information has implication on medical service provided. Lack of knowledge about symptoms, nature of examination and possible complication in patient with prostate diseases will decrease the will and desire of patients to seek medical services. Prostate cancer (Pca), the most commonly diagnosed cancer in men, is diagnosed in around 2000 men each day worldwide, and one man is estimated to die from the disease every 2 min. Prostate cancer incidence among Saudi adult men estimated to be 6.6%. Raising the awareness about available screening, interventions and modifications can minimize or reduce cancer cases.

**Aim:** In this study, we put a target to evaluate the level of awareness and knowledge of male population in eastern Saudi Arabia about prostate and prostate cancer.

**Methodology:** Self-administrated questionnaires were made containing questions asking about demographic data and multiple questions that evaluate awareness level about prostate cancer. Questionnaires have distributed amongst a sample of the research population that selected randomly in eastern Saudi Arabia.

**Result:** 1500 male individuals completed the questionnaires with a mean age of 34 years (response rate 100%). 63.9% never visited Urology clinic before. In the last two years, 91.3% didn't undergo any test for prostate. Only 42.4% know that prostate is not a disease. 38.9% stated that PCa is curable. Actually most of participants' answers for (Yes, No, I don't know) questions about prostate were I don't know. Higher education and person who get information from doctors said yes about the question (Does excessive sexual activity protect from prostate cancer?) more than others (P-value < 0.05). Most of our participants got their information from the internet (47.3%).

**Conclusion:** In conclusion, male population in Eastern Saudi Arabia obviously have a very weak idea about prostate cancer and there is a large percentage of them do not even know what prostate is. This lack of knowledge will be associated with increase the prevalence of cancer, in which most of participants didn't underwent any prostate screening in the last two years.

### Introduction:

The general population awareness and knowledge level of medical information has significant implications on healthcare. Factors such as care quality, abundance of information and impact on patient-healthcare provider relationship are considered as major corner stones that would make patients seek medical help. Prostate cancer (Pca), the most commonly diagnosed cancer in men, is diagnosed in around 2000 men each day worldwide, and one man is estimated to die from the disease every 2 min<sup>[12,13,14]</sup>. Prostate cancer incidence among Saudi adult men estimated to be 6.6%<sup>[15]</sup>. Lack of knowledge and awareness of prostate disease symptoms (weak stream, frequent urination, nocturia, urine retention, painful ejaculation, terminal bleeding), nature of examination and investigation( digital rectal examination, blood tests, PSA level, trans-rectal ultrasound guided biopsy, diagnostic and therapeutic cystoscopy) and possible complications (renal failure due to chronic retention, bone metastasis in prostate ca) in patients with prostate disease will make patients less likely to seek and ask for medical advice and proper treatment<sup>[11,12]</sup>. Availability of data related to the level of awareness and misconceptions about prostate and prostate cancer in the general population may help keep patients informed. Prostate cancer is one of the most common cancers among men worldwide, early screening and life style adjustment , even with non-controllable factors, can reduce or minimize the impact of this cancer on male population as well as the awareness of these risk factors can contribute to detecting early cancer cases and promote early management<sup>[3]</sup>.

The target of our study is to evaluate eastern Saudi Arabian male populations' knowledge, awareness and misconceptions about

prostate and prostate cancer, and to promote health education and contribute to modify population behavior.

### Methodology:

Our research sample is based in Eastern Saudi Arabia. Self-administrated questionnaires were made containing questions asking about demographic data (age, educational level, occupation, income, marital state, residency) and multiple questions that evaluate awareness level about PCa such as incidence of PCa, relation between sex and PCa, why to investigate for PCa, treatment, outcome.

The questionnaire also included questions about visiting urologist and source of information are included in questionnaire. Arabic language is native in the chosen population so, we translated the questionnaire from English to Arabic and 1500 copies have been printed and distributed amongst a sample of the research population. The Sample was selected randomly in public places at deferent cities and villages such as cafes, molls, mosques, clubs...etc.

### Statistical analysis:

IBM.SPSS Statistics version 24 computer application has been used for analysis. Missing data have been cancelled. Comparison between multiple variable has been made using Chi-Square Test and P-value = 0.05 was consider as a significant level.

### Ethical considerations:

This research got approval from Vice Dean for Graduate Studies and Scientific Research in College of medicine in King Faisal University in

Ahsa, Saudi Arabia. Verbal consents have been taken from each participant after explaining the idea, goals and information privacy.

**Table 1 Demographic data**

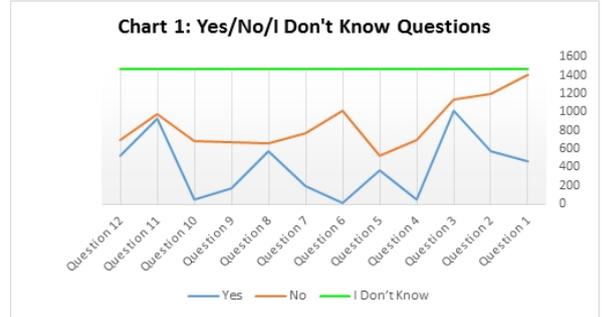
		Frequency (%)
3.3Age	< 20 years	82(5.5)
	20-39 years	961(64.1)
	40-60 years	416(27.7)
	> 60 years	26(1.7)
	Missing data	15(1)
Job status of responders	Student	319(21.6)
	Employee	979(66.4)
	Retired	75(5.1)
	Free business	42(2.8)
	Non-employee	53(3.6)
Education level	Did not enter school	8(0.5)
	Primary school	16(1.1)
	Intermediate school	56(3.8)
	Secondary school	506(34.3)
	Diploma	257(35.6)
	Bachelor	525(38.6)
	High degrees	107(7.3)
Marital status	Married	968(65.6)
	Single	507(34.4)
Income	Less than 5000 SAR	431(29.2)
	Between 5000 -10000 SAR	436(29.6)
	More than 10000 SAR	608(41.2)
Residency	City	1160(78.6)
	Village	315(21.4)

**Result:**

1500 male individuals completed the questionnaires with a mean age of 34 years (minimum 15 years, maximum 80 years and stander deviation 11.88). Demographic data are stated as frequency with their percentage in Table 2.

In Regards to Yes/No/I don't Know questions that is summarized in Table3: around 943 men (63.9%) did not visit urology clinic before and 68(4.6%) do not know whether they did or not. Around 573 participants (38.8%) believe that prostate is a disease. However, when participants have been asked whether all men have a prostate or not, most of them (69.2%) agreed. In the last two years, only 122(8.3%) underwent test for prostate. Only 28 gentlemen (1.9%) of participants have prostate cancer, while 221(15%) have relatives with prostate cancer. When we started evaluating the awareness of participants about prostate cancer, our findings, summarized in Table3; Large percentage 996(67.5%) know that prostate cancer is not a transmitted disease. Excessive sexual activity will result in prostate cancer is the opinion of 51 gentlemen (3.5%), while most of them 771(52.3%) do not know. On the other hand, 949(64.3%) do not know the effect of excessive sexual intercourse in decreasing the probability of prostate cancer, 154(10.4%) do not agree with this this statement, while only 372(25.2%) agreed. Participants have been asked whether prostate examination will affect the sexual life, there were 201gentlemen (13.6%) said it would. Only 91(6.2%) of participants believed that prostate cancer is not curable, while 574(38.9%) stated that it is curable while 809 (54.8%) do not know. However, 499(33.8%) persons are convinced that prostate surgery will end their manhood. Although 48(3.3%) of participants said if you operate the prostate cancer; it would spread. Based on the opinion of 934(63.3%) of our participants, prostate cancer is preventable, and 46(3.1%) have the opposite opinion, while 494(33.5%) do not have any idea. However, when participants have been asked whether the early surgery will prevent the spread of prostate cancer, only 532(36.1%) agreed.

Actually most of participants' answers for (Yes, No, I don't know) questions were I don't know [Chart1].



**Table 2 Yes/No/I Don't Know Questions**

	Yes (%)	No (%)	I Don't Know (%)
Did you visit Urologist before?	464(31.5)	943(63.9)	68(4.6)
Is prostate a disease?	573(38.8)	626(42.4)	276(18.7)
Do all men have prostate?	1021(69.2)	114(7.7)	340(23.1)
Have you had any test for prostate within the last 2 years?	122(8.3)	1348(91.4)	-
Are you diagnosed with prostate cancer?	28(1.9)	1447(98.1)	-
Do you have any relative diagnosed with prostate cancer?	221(15.0)	1254(85.0)	-
Is prostate cancer a transmitted disease?	16(1.1)	996(67.5)	462(31.3)
Does excessive sexual activity result in prostate cancer?	51(3.5)	653(44.3)	771(52.3)
Does excessive sexual activity protect from prostate cancer?	372(25.2)	154(10.4)	949(64.3)
Does prostate examination affect sexual life?	201(13.6)	574(38.9)	699(47.4)
Is prostate cancer curable?	574(38.9)	91(6.2)	809(54.8)
Does prostate surgery end your manhood?	175(11.9)	499(33.8)	800(54.2)
If prostate cancer operated on, will cancer spread?	48(3.3)	638(43.3)	787(53.4)
Is prostate cancer preventable?	934(63.3)	46(3.1)	494(33.5)
Can early surgery prevent the spread prostate cancer?	532(36.1)	161(10.9)	781(52.9)

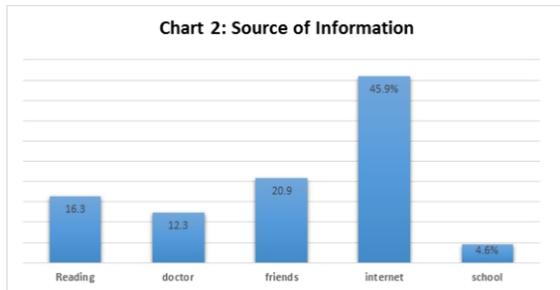
Three multiple choice questions have been asked to participants with allowing them to choose more than one choice, their answers are summarized on Table 4. We asked them about screening methods used for prostate cancer, 693(47%) chose clinical examinations, 341(23.1%) chose blood test, 263 (17.8%) chose sperm count, stool sample was also chosen by 124(8.4%). Second question was about risk factors of prostate cancer; 751(50.9%) assume old age is one of the risk factor, smoking is considered by 462(31.1%), familial/genetic risk factor was chosen by 501(34%), 340(23.1%) chose obesity, 365(24.7%) see that extra-marital sexual relationships is one of the risk factors as well, while only 97(6.6%) stated that race is a factor. Last question in Table 4 talks about the prevention of prostate cancer, 794(53.8%) said that regular exercise is one of factors that reduce prostate cancer, 943(63.9%) said regular check-up and screening, 432(29.3%) stated that the effect of eating plenty of fruits and vegetables would reduce the risk, while only 467(31.7%) said having sex in a regular manner would reduce the risk.

**Table 3 Multiple choice Questions**

	Yes (%)
<b>Which of the following is used to screen for prostate cancer?</b>	
Stool sample	124(8.4)
Blood test	341(23.1)
Sperm count	263(17.8)
Clinical exam	693(47.0)
<b>Which of the following, if any, is/are a risk factor?</b>	
Old age	751(50.9)

Smoking	462(31.1)
High fat diet	182(12.3)
Obesity	340(23.1)
Familial/genetics	501(34.0)
Extra-marital sexual relationships	365(24.7)
Race	97(6.6)
<b>Which of the following, if any, reduce risk of prostate cancer?</b>	
Regular exercise	794(53.8)
Regular check-ups/screening	943(63.9)
Eat plenty of fruit & vegetables	432(29.3)
having sex in a regular manner	467(31.7)

Race 97(6.6)Which of the following, if any, reduce risk of prostate cancer? Regular exercise 794 (53.8)Regular check-ups/screening 943 (63.9)Eat plenty of fruit & vegetables 432 (29.3)having sex in a regular manner467(31.7)



who take their information from friends have this idea more than others, while people with a high degree education, high income and take their information from doctors said no. (Do all men have prostate?) is significant (P-value < 0.05) and people with free business, who didn't attend school and/or have intermediate income are more than those who said no. (Does excessive sexual activity results in prostate cancer?) is significant (P-value < 0.05) and people in free business, who didn't attend school, single and/or people with low income said yes while employed, people with high degree, married and/or have high income said no. (Does excessive sexual activity protect from prostate cancer?) is significant (P-value < 0.05) and participants with high degree and people who take their information from doctors said yes more than others. (Is prostate cancer a transmitted disease?) is significant (P-value < 0.05) and mostly students, single people, people with low income said yes while retired, people with Bachelor degrees and those with high income said no more than others. (Are you diagnosed with prostate cancer?) is significant (P-value < 0.05) and retired people are diagnosed with prostate cancer more than others, while students are the least. (have you had any test for prostate within the last 2 years?) is significant (P-value < 0.05) and retired people, people who are married, people with high income had gone through tests more than others. (Does prostate examination affect sexual life?) is significant (P-value < 0.05) and people who didn't attend school, people with low income, and those who get their information from the internet said yes while those with high degree education, people with high income, and those who take their information from doctors said no more than others. (Is prostate cancer curable?) is significant (P-value < 0.05) and gentlemen with high degree education, people with high income, and those who take information from doctors said yes more than others while those who take information from the internet said no more than others. (Prostate surgery will make you impotent?) is significant (P-value < 0.05) and students, people with Bachelor degrees, single people, those with low income, people who take their information from internet said yes more than others, while people with high degree education and those with high income said no more than others.

#### Discussion:

Age, sexuality and sexual behavior, continence and retention problems, and cancer complication which are related to prostate and prostate cancer affect all populations. The nature of these problems

and complications affect the probability of a patient to seek medical advice or not and affect the selection of a proper treatment. This study provides a mirror to the awareness of prostate and prostate cancer in male population in eastern Saudi Arabia because there is no previous study that took the aspect of awareness into consideration. Urologists, family physicians and general practitioners have to educate and inform patients about the nature of prostate and prostate cancer. A creative list was formed that includes common misconceptions and incorrect information that may face family physicians, general practitioners and urologists. Some questions are related to local culture and some can be global misconceptions.

Assessing the awareness and knowledge about prostate and prostate cancer has very limited tools which are mainly concentrated on prostate cancer [4]. In a study where the knowledge and level of patients with localized prostate cancer were assessed using a special questionnaire, patients reported that they consult the internet in making their decisions based on incomplete or incorrect information, and using false or incorrectly explained information from family or friends in choosing management options<sup>[5,6,7]</sup>. A new approach has to be established to make men able to decide and choose management individually when they are diagnosed with prostate cancer and speak freely and address their thoughts and actual feelings about that matter<sup>[8-1]</sup>.

The word "prostate" has been used as referring term to the prostate diseases rather than the organ, this misconception rate that obtained was 57.5% (38.8% answered yes, 18.7 answered I do not know)<sup>[9]</sup>.

Some of our questions were based on medical and scientific background and some were untrue obtained from general population.

Excessive sexuality and prostate cancer relationship was encountered in the questions as either increasing or decreasing the probability of developing prostate cancer. According to an article published in the Journal of the American Medical Association. Frequent ejaculation appears to provide a protective aspect against the development of prostate cancer<sup>[10,11]</sup>.

The survey highlighted population awareness about some risk factors. population had a poor to fair awareness of the most common risk factors for prostate cancer such as age (50.9%), family history (34.0%), race(6.6%), and high fat diet (12.3%)<sup>[9][10]</sup>. 31.1% considered smoking as a risk factor, obesity (23.1%), and extramarital relationships (24.7%) also considered as risk factors. These results should raise the attention that people lack the appropriate level of awareness to be encountered in prostate cancer management<sup>[10,11]</sup>.

The survey also highlighted the population awareness about some possible protective factors. Population had a fair awareness of considering regular check ups/screening as a protective factor(63.9%), they also had considered regular exercise(53.8%) as a protective factor<sup>[10]</sup>.

In addition, the discrepancy in the results of questions about excessive sexuality as either risk or protective factor on incidence prostate cancer has impacted inversely on accuracy and weighted reliability on final result.

To conclude discussion part: the lack of awareness about risk and protective factors, need of seeking medical advice, screening tests, and possible complication should encourage health care provider to promote health education and establishing new guidelines in a sociocultural and cost-effective route.

#### Conclusion:

In conclusion, male population in Eastern Saudi Arabia obviously have a very weak idea about prostate cancer and there is a large percentage of them do not even know what prostate is. This lack of

knowledge expected to lead to increase the prevalence of cancer, in which most of participants didn't underwent any prostate screening in the last two years, also the presence of idea of the effect of prostate examination in sexual life, weakness of awareness about the rule of sexual intercourse in the incidence of prostate cancer, and weakness of awareness about modifiable risk factors and how to prevent the incidence of prostate cancer. Also weak information about treatment will lead to miss the idea of good prognosis when early diagnosed.

We can consider urology clinic as one of less popular clinic as most of participants never visited the clinic and there is some percentage that do not even know whether they visited it before or not, this (in our opinion) is one of the main causes of lack of knowledge about prostate and prostate cancer, as we saw that a lot of correct answers have been answered from participants who get their information from doctors.

There are significant different in knowledge regarding to job, education, residency, marital state, income and source of information.

By this result we can give these suggestions to increase the awareness as this will lead to decrease the prevalence of prostate cancer: increase community awareness campaigns by Ministry of Health and health associations in public places, publish awareness bulletins, send recommendations to family medicine physicians to increase the awareness especially adults and old males, improve the rule of mass media to improve the awareness and increase trusted websites that have easy access and obvious information with easy language (As we found that most of participants get their information from internet) and erase the idea that prostate cancer is a terminal case by publishing cases that got full recovery.

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