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Research Article

Knowledge and Perception About Prostate Cancer and its Preventive Services Among Attendants in PHCs, Riyadh, Saudi Arabia

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Abstract

Background: Prostate cancer is the second most frequent tumor in men worldwide and a major health problem in Saudi Arabia, in which the incidence is expected to increase. Despite the availability of screening methods, low awareness and utilization of preventive services lead to many late-stage diagnoses.

Objective: In this study, we aimed to assess knowledge and beliefs about prostate cancer in the Saudi population and knowledge about associated services.

Methods: With a convenience sampling method, of 360 men was conducted with a cross-sectional survey. The thirteen questions of the questionnaire were related to knowledge, attitudes, and practices regarding prostate cancer and screening. Statistical analysis data were done using SPSS.

Results: The samples were dominated by men below 40 years of age (60.6%), most with university degrees (70.6%), and half were earning less than 10,000 SAR monthly. Eighty-five percent of participants had heard of prostate cancer, while 66.7 percent lacked knowledge about available screening tests. Nevertheless, 55 percent did not know that clinical examinations alone don't make a diagnosis. Among those, only 6.7% had been given professional advice about screening, and a staggering 96.1% had never had a PSA test. Statistical analysis showed strong associations between awareness of prostate cancer (P = 0.029) and marital status and between knowledge of detection methods (P = 0.029) and income level.

Conclusion: Prostate cancer is known among Saudis with a relatively high awareness but there remain major knowledge gaps about the screening methods and that of health care providers in promoting early detection. This low uptake of testing with PSA reflects the importance of targeted educational campaigns, as well as improved communication strategies from healthcare providers to improve awareness of and to promote proactive health-seeking behaviors. This is necessary to reduce the burden of prostate cancer in Saudi Arabia and to improve patient outcomes.

Keywords: Preventive Services; Prostate Cancer; Knowledge

Introduction and Literature Review

Prostate cancer is estimated as the second most cancer affecting men worldwide and fifth most cause of cancer [1,2]. It can be defined as the cancer of the prostate gland, which is found only in men below the bladder in the pelvis area, and lies in front of the rectum and around the urethra. The prostate gland is known for its share in the production of semen and its responsibility in carrying the sperm made by the testes. Prostate cancer is a frequent disease and is the second most common cancer-causing death in the United States. In Saudi Arabia, it is estimated that the prevalence of the disease is about 6.6% and it is expected to increase [3]. Lack of knowledge about the disease, its symptoms, complications, and the nature of the routine prostate examination are major points that contribute to the patients' reach out for medical advice being seen at late stages of the disease [3]. In two studies in Saudi Arabia about knowledge and attitude toward prostate cancer screening practices the knowledge about prostate cancer was fairly good 51.25 and 64% while those who screened for prostate cancer through prostate-specific antigen (PSA) or digital rectal was low 10 and 23% respectively [4,5].

In the other study, Zakaria Eltahir and Alahmadi found. The population of the Al-Madinah region showed a moderate level of awareness of prostate cancer, but this level of knowledge has not been reflected in the impact uptake of prostate cancer screening among participants. It is suggested that actions need be taken by the relevant authority to influence the uptake of prostate cancer screening in order to minimize the burden of the disease on the local community and probably within the whole country. Indeed, this will improve the quality of life and it would have a good reflection on the economy [6]. Prostate cancer appears to be a serious disease in Aseer, Saudi Arabia. In one study among the 883 included patients, 132 (15%) underwent a prostate biopsy and were found to have a tumor. Most of the patients diagnosed with PC 96% were aged over 60 years [7].

Another study focusing on Awareness of Prostate Cancer and Screening was conducted by Ahmed Mousa Almuhanna and his colleagues recently among the male population at Riyadh region in Saudi Arabia in 2018. Re- searchers' findings showed that the majority of the participants have a high level of knowledge about prostate cancer, however, only a minority of them have knowledge about the symptoms of prostate cancer and have undergone regular screening for prostate cancer [8]. There was a steady increase in the CIRs and ASIRs for prostate cancer between 2001 and 2008. The eastern region, Riyadh and Makkah had the highest overall ASIR in Saudi Arabia. Further effective screening. programs and active treatment measures are needed to control prostate cancer disease among Saudi men [9]. The prevalence of prostate cancer in the Saudi male population is higher than that reported by the Saudi Cancer Registry; however, it is low compared with prevalences in developed countries. The mortality rate is also very low. Prostate-specific antigen screening in Saudi Arabia should not be carried out routinely; instead, it should only be carried out on an individual basis [10]. The study showed that the level of knowledge of Prostate Cancer a is low. Thus, the community and individuals should collaborate to increase awareness by having more awareness campaigns, disseminating the information through the media, and encouraging men to do screening tests as indicated. In addition, including more Saudi Arabian cities in future studies is preferable to have more precise outcomes [11].

The increases in the incidence of different types of cancer in the past decade could be due to the revolutionary change in socioeconomic status that has occurred in Saudi Arabia; therefore, a national plan should be established for cancer prevention, screening, and therapy. Concerning mortality, the decrease in its percentage among elderly people could be due to biological factors that should be investigated in the future [12]. In one study about the knowledge and attitude of the population toward prostate cancer in Riyadh, Beliefs and attitudes have a great impact, at every stage of the cancer continuum, this attitude depends mainly on the level of knowledge and quantity of information provided to patients and their families. Such attitudes should rely on a solid background of proper information and motivation from physicians to enhance and empower attitudes toward PC screening behavior [13]. In tertiary-care centre in the Eastern province found an advanced stage of disease at presentation mandates an early-detection, hospital-based screening program. Further research should include many more patients and be based in several centers [14]. The public lacks knowledge of well-established cancer risk factors and warning signs, despite recent advances in the medical field. Results suggest that current strategies to educate the public need to be revised [15].

Objective

To assess the knowledge and perception of Saudi population about preventive services related to prostate cancer.

Materials and Methods

A cross-sectional survey was conducted on a sample of men attending the PHC. The questionnaire was distributed using a non-random sampling method (convenience sampling) that included 13 questions that assess the knowledge, attitude, and practice of adult male patients toward prostate cancer and its screening methods.

The questions were divided into three general questions that test the knowledge, four questions that analyze patients' opinions (attitude), and six questions on how patients are practicing screening methods with questions three and six being dependent on the answers to the questions that come before them.

The sample was collected by the Convenience Non-Random Sampling technique.

- Sample Size was Calculated by one proportion.
- The data was statistically analyzed using SPSS.

Results

Table (1) displays various demographic parameters of the participants with a total number of (360). The sociodemographic characteristics of the sample is consisting of age distribution, educational attainment, income level, and marital status elucidating the data. About 60.6 percent of participants are aged 30 to 40, which means that this age bracket has a majority of relatively younger individuals. In addition, 70.6 percent have a university degree, a figure that points to a trend towards higher education which is more important in a knowledge-based economy. In terms of income, 70 per cent of respondent's report earning, as is implied, more than 10,000 SAR or 2,700 dollars per month, yielding a relatively affluent profile. Additionally, knowing the marital status we find that 81.1% of the participant are married which may correlate with their viewpoints and priorities in different aspects such as consumer behavior as well as lifestyle choices. However, 85 percent of respondents knew about prostate cancer, but sadly 66.7 percent had no knowledge of available detection tests. This underscores the high need for increased educational initiatives especially on the low rate of screening since only 6.7% were able to undergo healthcare advice of having the PSA tested and a whopping 96.1% have never been for a PSA test.

Table 1: Sociodemographic characteristics of participants (n = 360).

Parameter		No.	Percent (%)
Age	30 to 40	218	60.6
	40 to 50	52	14.4
	More than 50	90	25.0
Educational level	Primary school	4	1.1
	Middle school	2	.6
	High school	68	18.9
	Diploma	16	4.4
	University degree	254	70.6
	Board degree	2	.6
	Master's degree	6	1.7
	PHD	8	2.2
Monthly income in SAR	Less than 5000	46	12.8
	5000-10000	62	17.2
	More than 10000	252	70.0
Marital status	Single	68	18.9
	Married	292	81.1

As shows in figure 1, The data illustrated in this figure outlines the age bands of men who perceive a need for health screening. Among a total sample size of 360 respondents, a sizeable 48, around 13.3% of the people, stated that men should start screening between the ages of 30 and 40. On the other hand, 140 respondents, around 38.9% of the total, focused on the age group of 40 to 50. The biggest concern, though, comes from the likes of men aged 50 and over with 172 backing screenings in that cohort, or 47.8%.

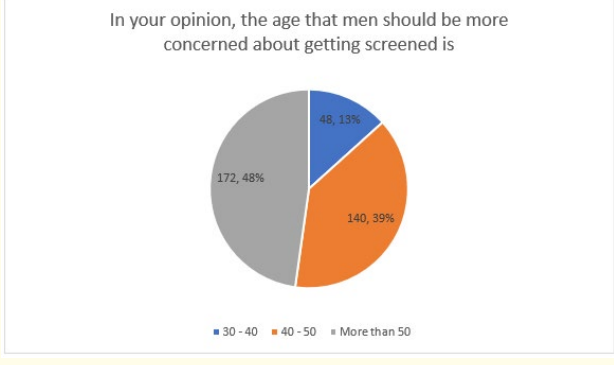

Figure 1: Illustrates the age that men should be more concerned about getting screened among participants (n = 360).

Table 2 presents some significant insights about the awareness and understanding of prostate cancer in Saudi Arabian population surveyed. Noteworthy among this is that a massive 85% of respondents admitted to hearing of prostate cancer but concerning 66.7% of these respondents lack knowledge on the various tests available for detection. The results shows that most participants believe that men should first begin screening at 50 and that is consistent with the current medical guidelines, however, the large percent (55%) who did not know that clinical prostate examination is not the only way the prostate can be diagnosed is a glaring gap in knowledge. Additionally, only 6.7% of individuals have received an advisement from a healthcare professional to be screened while 96.1% have not had a PSA test.

Table 2: Parameters related to knowledge about prostate cancer and its preventive services among the population of Saudi Arabia (n = 360).

Parameter		No.	Percent (%)
You heard about prostate cancer	No	54	15.0
	Yes	306	85.0
You know some of the types of tests to detect prostate cancer	No	240	66.7
	Yes	120	33.3
In your opinion, the age that men should be more concerned about getting screened is	30 - 40	48	13.3
	40 - 50	140	38.9
	More than 50	172	47.8
Clinical prostate examination is the only way to diagnose prostate cancer	Yes	24	6.7
	No	138	38.3
	I don't know	198	55.0
Only men with urinary symptoms should get tested	Yes	114	31.7
	No	122	33.9
	I don't know	124	34.4
Any doctor advised you to have a prostate cancer screening	No	336	93.3
	Yes	24	6.7
You had a prostate exam	No	322	89.4
	Yes	38	10.6
You had a PSA test	No	346	96.1
	Yes	14	3.9

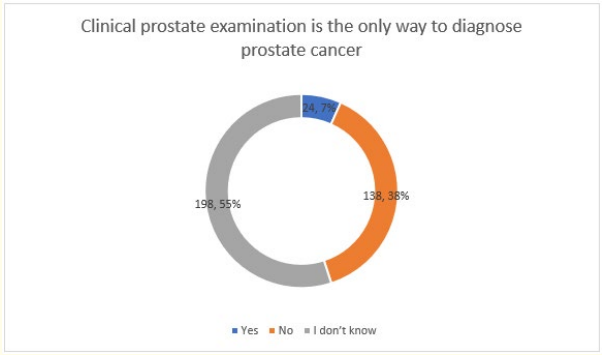

Figure 2: Illustrates if clinical prostate examination is the only way to diagnose prostate cancer among participants.

As shown in figure (2), The presented data provides interesting information about level of people's awareness regarding usefulness of clinical prostate examination for prostate cancer diagnosis in a set of 360 people. For example, only 24 participants — roughly 6.67 percent of all respondents — agree that a clinical prostate exam is the only way to diagnose this common malignancy. However, 138 people (38.33 per cent) say it is not only a diagnostic tool available. In addition, 198 or 55% of respondents declare uncertainty, which is a significant failure related to knowledge or awareness of prostate cancer diagnosis.

Table 3 shows that hearing about prostate cancer has statistically significant relation to marital status (P value = 0.029). It also shows statistically insignificant relation to age and monthly income.

Table 4 shows that knowing some of the types of tests to detect prostate cancer has statistically significant relation to monthly income (P value = 0.029). It also shows statistically insignificant relation to age and marital status.

Table 3: Relation between hearing about prostate cancer and sociodemographic characteristics.

*P value was considered significant if ≤ 0.05.

Parameters No		Have you heard about prostate cancer?		Total (N = 360)	P value*
		Yes			
Age	30 to 40	38	180	218	0.277
		70.4%	58.8%	60.6%	
	40 to 50	6	46	52	
		11.1%	15.0%	14.4%	
	More than 50	10	80	90	
		18.5%	26.1%	25.0%	
Educational level	Primary school	0	4	4	N/A
		0.0%	1.3%	1.1%	
	Middle school	0	2	2	
		0.0%	0.7%	0.6%	
	High school	10	58	68	
		18.5%	19.0%	18.9%	
	Diploma	2	14	16	
		3.7%	4.6%	4.4%	
	University degree	42	212	254	
		77.8%	69.3%	70.6%	
	Board degree	0	2	2	
		0.0%	0.7%	0.6%	
	Master's degree	0	8	8	
		0.0%	2.6%	2.2%	
	PHD	0	6	6	
		0.0%	2.0%	1.7%	
Monthly income	Less than 5000	6	40	46	0.904
		11.1%	13.1%	12.8%	
	5000-10000	10	52	62	
		18.5%	17.0%	17.2%	
	More than 10000	38	214	252	
		70.4%	69.9%	70.0%	
Marital status	Single	16	52	68	0.029
		29.6%	17.0%	18.9%	
	Married	38	254	292	
		70.4%	83.0%	81.1%	

Table 4: Types of tests to detect prostate cancer in association with sociodemographic characteristics.

*P value was considered significant if ≤ 0.05.

Parameters No		You know some of the types of tests to detect prostate cancer		Total (N = 360)	P value*
		No	Yes		
Age	30 to 40	150	68	218	0.106
		62.5%	56.7%	60.6%	
	40 to 50	28	24	52	
		11.7%	20.0%	14.4%	
	More than 50	62	28	90	
		25.8%	23.3%	25.0%	
Educational level	Primary school	4	0	4	N/A
		1.7%	0.0%	1.1%	
	Middle school	2	0	2	
		0.8%	0.0%	0.6%	
	High school	56	12	68	
		23.3%	10.0%	18.9%	
	Diploma	12	4	16	
		5.0%	3.3%	4.4%	
	University degree	158	96	254	
		65.8%	80.0%	70.6%	
	Board degree	2	0	2	
		0.8%	0.0%	0.6%	
	Master's degree	2	6	8	
		0.8%	5.0%	2.2%	
	PHD	4	2	6	
		1.7%	1.7%	1.7%	
Monthly income	Less than 5000	32	14	46	0.004
		13.3%	11.7%	12.8%	
	5000-10000	52	10	62	
		21.7%	8.3%	17.2%	
	More than 10000	156	96	252	
		65.0%	80.0%	70.0%	
Marital status	Single	46	22	68	0.849
		19.2%	18.3%	18.9%	
	Married	194	98	292	
		80.8%	81.7%	81.1%	

Table 5 shows having a prostate exam has a statistically significant relation to age (P value = 0.0001), and marital status (P value = 0.023). It also shows a statistically insignificant relation to monthly income.

Table 5: Having a prostate exam in association with sociodemographic characteristics.

*P value was considered significant if ≤ 0.05.

Parameters No		You had a prostate exam		Total (N = 360)	P value*
		No	Yes		
Age	30 to 40	202	16	218	0.0001
		62.7%	42.1%	60.6%	
	40 to 50	36	16	52	
		11.2%	42.1%	14.4%	
	More than 50	84	6	90	
		26.1%	15.8%	25.0%	
Educational level	Primary school	4	0	4	N/A
		1.2%	0.0%	1.1%	
	Middle school	2	0	2	
		0.6%	0.0%	0.6%	
	High school	56	12	68	
		17.4%	31.6%	18.9%	
	Diploma	16	0	16	
		5.0%	0.0%	4.4%	
	University degree	232	22	254	
		72.0%	57.9%	70.6%	
	Board degree	2	0	2	
		0.6%	0.0%	0.6%	
	Master's degree	6	0	6	
		1.9%	0.0%	1.7%	
	PHD	4	4	8	
		1.2%	10.5%	2.2%	
Monthly income	Less than 5000	42	4	46	0.415
		13.0%	10.5%	12.8%	
	5000-10000	58	4	62	
		18.0%	10.5%	17.2%	
	More than 10000	222	30	252	
		68.9%	78.9%	70.0%	
Marital status	Single	66	2	68	0.023
		20.5%	5.3%	18.9%	
	Married	256	36	292	
		79.5%	94.7%	81.1%	

Discussion

Prostate cancer is an abnormal growth of the prostate gland, which lies at the base of the bladder normally weighs in at about 20 g, and produces enzymes that help with fertility [16]. Physical and psychological symptoms develop, although in early stages they often are asymptomatic, and in other stages mimicking benign prostatic hyperplasia such as interrupted flow and nocturia develop, and in more advanced stages spread to bones. It is the second most common malignancy and fifth leading cause of death in men worldwide, causing an annual death of approximately 358,989 (3.8% of male cancer deaths) [17]. Typically, prostate cancer screening includes two parts: a digital rectal exam (DRE) and the prostate-specific antigen (PSA) test; however, they are also controversial due to the fear of overdiagnosis and false positives leading to unnecessary invasive tests and accompanying complications [18]. Accordingly, we aimed in this study to evaluate the knowledge and perception of the Saudi population regarding preventive services for prostate cancer.

In our study related to knowledge and perception about prostate cancer and its preventive services, we found that the knowledge level could be commended with 85 percent of respondents knowing about prostate cancer. Nevertheless, a worrying 66.7% were not aware of the existing detection tests, revealing a glaring knowledge deficit, comparable to a cross-sectional study by Benurugo., *et al*. [19]. (2020). Benurugo., *et al*. reported that 80% of their participants were aware of prostate cancer primarily from healthcare providers, however, our findings suggest that the source of information regarding the topic for many individuals may not be as reliable or authoritative as we expected with 6.7% of participants reporting advice regarding screening from healthcare professionals.

The conclusion reached in our study reflects this critical deficit in the role that healthcare providers play in educating patients about their prostate cancer risk factors and early screening. Interestingly, most participants understood the need for screening to start once 50 years old, which adheres to the current medical guidelines, yet nearly 55% of them were unfamiliar with the fact that clinical examinations on their own are not enough to diagnose. This is different from the result of Necku., *et al*. [20] (2019), who reported a much higher level of PSA screening test awareness at 76%. Our study also demonstrated that most of the respondents (96.1%) had never been tested for PSA, greatly highlighting this gap in preventive health measures related to prostate cancer screening. This alarming statistic is similar to another study in Italy which did find lower participation in screening initiatives than in Rwanda, Ghana, and Zambia, where larger percentages of people have undergone PSA testing [19-22]. Additionally, findings were also found in a study conducted in Muldersdrift among patients attending a Urology clinic where more than half (54.4%) had never heard about PC, and 90.2% of respondents never knew of the existence of prostate cancer [23]. By contrast, some African countries found that more than three quarters, 94.9%, had a high level of knowledge about prostate cancer and 54.1% were aware of PC, respectively [24,25]. Our findings also revealed associations between awareness levels and demographic factors such as marital status and income. This is consistent with the assertion that socio-economic elements may play a significant role in an individual's health-seeking behavior and awareness. Previous research has also underscored that family history, such as that referenced by Benurugo., *et al*. [19] (2020), remains a recognized risk factor. In our population, age and marital status were correlated with the likelihood of having undergone a prostate exam, which echoes similar patterns reported in other geographical contexts, where awareness and proactive health measures significantly differ among age groups and marital statuses [19,21,22,26,27]. Our findings contrast with previous studies, which have shown different levels of knowledge regarding factors associated with prostate cancer risk. Also, our respondents emphasized age and family history as major risk factors, while participants in Nigeria primarily recognized sexual activity as a familiar one. This divergence shows the disparity of how cultural perceptions define awareness and understanding of prostate cancer risk, for different populations [26]. Although family history was of particular note in our survey as an important risk factor, these lifestyle factors — diet and exercise — were also cited as protective factors, in a way that is contrary to other research that suggests less than full appreciation of preventative strategies and screening [19,21]. In addition, a lack of awareness surrounding preventative measures and screening is in keeping with results from previous studies indicating little overall knowledge of prostate cancer and screening methods. This is corroborated by the findings of Gift., *et al*. [22] (2020) which relate to increases in awareness campaigns and proactive education from healthcare providers to slow down the knowledge deficiencies in the community.

Conclusion

Finally, this study demonstrates a knowledge and perception gap relating to prostate cancer in the Saudi population. Finally, we found that demographic factors, including marital status and income, affect motivation to be screened and make screening decisions, and thus may be targeted to achieve improved health-seeking behaviors. Results are consistent with previous investigators who have identified important roles for healthcare providers in teaching patients about prostate cancer risk factors and the potential need for timely screening. The reduction of the burden of prostate cancer in Saudi Arabia requires extensive effort in raising awareness and encouraging actively demonstration of prostate cancer screening practices in the community.

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