

ORIGINAL RESEARCH

Evaluation of men's knowledge, attitudes, and performance toward Prostate Cancer in the Urology Clinic of Imam Khomeini Hospital, Urmia, Iran

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Abstract: **Introduction:** Prostate cancer is the second most common cancer after lung cancer worldwide. In 2018, there were 1276106 new cases and 3.8% (358989 cases) of the population who died of this cancer were men. (What do you mean? All were men because we are talking about prostate cancer, but do you mean the mortality rate?) We aimed to evaluate men's knowledge, attitudes, and performance toward prostate cancer. **Material and Methods:** A descriptive analysis was done on 385 men in the urology clinic of Imam Khomeini Hospital. Men aged at least 40 with no history of prostate cancer were included in this survey. The researchers made a questionnaire including two parts: the first part comprised information about knowledge, attitudes, performance, and the second part consisted of demographics. The men's function was divided into two groups according to performing the PSA test: the good function group (PSA tests were done) and the weak function group (PSA tests were not done). Data analyzed were analyzed using SPSS software, version 20. **Results:** The mean±SD age of the men was 63.9±8.9 years and 56.6% of them were city dwellers. 22.7% had a university degree. Most (38.5%) were Self-employed and most (76.3%) had no family history of prostate cancer. Most participants answered the general questions about prostate cancer, but they did not have suitable and reliable information about related risk factors, diet, and sexual activity. **Conclusions:** Considering the positive effect of people's knowledge on their attitude and their attitude on their performance, by holding training classes and education for people at risk their attitude and ultimately their performance towards prostate cancer prevention would be improved.

Keywords: Prostate Cancer, Knowledge, Attitude, Men's Health, Urology

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1. Introduction

Prostate cancer is the second most common cancer among men and the fifth cause of death in the world (1). According to previous studies, prostate cancer affected 1.1 million people's health in 2012 and new cases increased to 1.3 million in 2018 (1, 2). 42% of patients with prostate cancer are over 50 years old and cases are mainly over 60 years old (1). According to the research, prostate cancer as a chronic disease might threaten men's health. (2) Epidemiological studies have indicated that demographic variables such as race and geographical characteristics play a prominent role in influ-

encing the prevalence of prostate cancer (3). The prevalence of prostate cancer in European (3-10%) countries is more than in Iran (9.1/100000) (4,5). Also, studies have shown that geographical factors increase the prevalence of prostate cancer (6,7).

Screening helps in the early diagnosis of symptomatic prostate cancer and its early treatment. An accurate, reliable, and accessible test is crucial for effective screening. In other words, it is clinically essential to diagnose cancers in pre-clinical stages. The diagnosis should be progressed along with effective therapies and simultaneously compared with the beginning of treatment (8).

A controversial problem with prostate cancer management is a delay in going to the hospital which could be due to the fact that patients are deprived of suitable knowledge and health training about the disease, lack of screening programs and medical facilities as well as shortage of urology care (9,10).

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Previous studies have shown that the level of general knowledge related to prostate cancer was moderate and activities that reduce the incidence of prostate cancer were unknown. few studies have been done related to knowledge, attitude, and performance about prostate cancer in Iranian men (11). Research has shown that men who have higher levels of knowledge mostly participate in screening programs (12).

Considering the high prevalence of prostate cancer and related mortality in Iran and since one of the reasons for lack of referral is the lack of knowledge and attitude towards prostate cancer, we aimed to investigate the level of knowledge, attitude, and performance of patients.

2. Material and Methods

2.1. Study design, and Data collection

A retrospective study was done in the urology clinic of Imam Khomeini Hospital to evaluate the level of knowledge, performance, and attitude of men about prostate cancer. 385 men aged >40 years without a history of prostate cancer were randomly selected. Data collection was done using a questionnaire published by Rezaeian and colleagues and the objectives of the study were explained to referring men in the urology clinic. The validity and reliability of the questionnaire used in our study were 0.89 and 0.85, respectively, according to that study (10).

The questionnaire included two parts: first, questions about knowledge, attitude, and demographic characteristics (16). In the demographic part, questions were related to marital status, education level, income, insurance status, and history of prostate cancer. The second part was divided into three items measuring the knowledge (23 questions), attitude (10 questions), and performance (1 question).

The relative frequency of the participants' responses to the knowledge and attitude questions was calculated. The level of knowledge was considered as a dichotomous variable (correct=0 and incorrect=1) and the total score was calculated according to the number of correct and incorrect answers. A total score of less than 40 was assumed as low, 40-60 as a medium, and above 60 a high level of knowledge. Positive and negative attitude questions scored reversely from 1 to 5 so that 5 showed a completely negative attitude and 1 showed a completely positive attitude. The total score as well as negative and positive attitudes were classified with scores less and more than 50.

The function of men was divided into two groups according to performing the PSA test. In the good function group, PSA tests were performed in the weak function group the tests were not performed.

2.2. Statistical analyses

Analysis of variance and Chi-square tests were used to analyze collected data. Furthermore, a logistic regression model was used to examine the relationships between predictors and men's performance. Data were analyzed using SPSS software, version 20. This study was an observational study, so no intervention was made in the patient's treatment process and no additional costs were imposed on the patient. The patients' information was collected anonymously and kept confidential by the researcher. The results of the study were reported anonymously. This study was approved by the Ethics Committee of Urmia University of Medical Sciences (code: IR.UMSU.REC.1399.009).

3. Results

3.1. Sociodemographic characteristics

This study was conducted on 385 men which were classified based on their age, location, educational level, occupation, insurance, and smoking. The mean \pm SD age of the participants was 63.9 \pm 8.9 years. 56.6% of them were city dwellers and the rest lived in villages. 25.8% of participants had a middle school education and 22.7% of the individuals had a university education. 38.5% were self-employed and 13% were retired. 75.8% were covered by insurance services. Moreover, 50% of the men were smokers (Table 1). We found that as the age of the participants increased, the average knowledge scores increased significantly from 34.1% to 50.4% in men aged 60-69 years to 61.5% among men over 70 years. Similarly, these results were true about education and urban residency ($P<0.0001$, Table 2).

The mean attitude score differed among diverse covariates such as age and education ($P<0.05$, table 3). Reversely, age and mean attitude score had an adverse relationship. Also, analysis of variance showed that rural residency increased the mean attitude score ($P=0.003$). The number of men grouped in good function increased as age increased (Table 4). It means that the number of participants in the good function group increased from 27.5% to 46.5% in the <60 years to 60-69 years age groups ($P<0.0001$). This figure rose to 57.3% in men over 70 years ($P<0.0001$). However, a higher level of education did not increase the number of men in the good function group. Nonetheless, the differences between education categories were significant ($P<0.0001$).

4. Discussion

This study presents an outlook on knowledge, performance, and attitude of men towards prostate cancer in the Urology Clinic of Imam Khomeini Hospital in Urmia. We found that approximately half of the participants had suitable knowledge about prostate cancer. Most men had a positive atti-

tude towards this disease, and in more than half, there was no prominent performance, specifically in prostate cancer screening. Despite the high level of knowledge and attitude (55% and 97.1% respectively), the level of performance was below 43%.

Rezaeian and colleagues evaluated the knowledge, attitude, and performance of retired men toward prostate cancer and found that 55% had good knowledge, 39.8% had a good attitude, and 6.7% had good performance towards prostate cancer. In our study, there was a significant statistical relationship between knowledge and attitude, attitude and performance, and knowledge and performance, but in our study, there was no significant statistical relation between attitude and performance despite the meaningful relationship between knowledge and attitude, as well as between knowledge and performance. This difference may be attributed to socioeconomic status.

Although their attitudes had nothing to do with the performance there was a significant relationship between their demographic characteristics and knowledge, attitude, and performance. All participants had an intermediate level of knowledge of prostate cancer and the mean score of their knowledge was 54.9 ± 19.6 . 47.9% of men had suitable knowledge and 53% of them had low and intermediate knowledge about prostate cancer. Men's general knowledge was suitable and they were aware of the symptoms of the disease, but their knowledge did not suffice to realize the association between risk factors and prostate cancer. Saturated fat, low fruit and vegetable intake besides the impact of sexual activity are points to be noted.

Marashi and co-workers assessed male workers' knowledge about prostate cancer screening. It is thought that there is a lack of knowledge among them (33.4%) but our study showed that knowledge was high (55%). The results of this study were similar to previous studies in developed countries. Their findings demonstrated that education, type of insurance, and income have something to do with the level of knowledge, whereas there was no significant association between age and patients' knowledge in this study (11). Moreover, city life could have a positive effect upon the average scores of men's knowledge and attitude may be because of the higher level of education among men living in urban (12). Mirone and colleagues' study showed the same results. In their study, 97.2% of individuals had adequate information. It was concluded that the differences rose from a diversity of populations (14). In Rezaeian and co-workers' survey, 39.8% of men had positive attitudes toward prostate cancer. According to observations, 43% of them performed the PSA test previously, and in total, 57% of men's performance was not good (10). In our study, the participants were older than the participants in the mentioned study.

Performance examination indicated that 58% of the partici-

pants performed PSA tests either twice or 3 times and 71.5% of them did their PSA tests as part of their routine checkups. More than half did not perform PSA tests. It should be noted that this study's population age might be differed from the general population, as based on screening reports men aged less than 40 did not take PSA tests as a routine checkup.

In this study, there was a correlation between knowledge and attitudes of individuals and with an increase in knowledge scores, their attitudes scores also increased. Men who had good information about prostate cancer had better performance than men without good information (58.2% vs 40%). In one study, screening was rare among the participants with a high level of information (15), which was inconsistent with our results. In another study, a lack of information about prostate cancer led to decreased number of screening procedures (14). Diversity in the results of previous studies might be related to the variation of population on which the survey was done. Moreover, the increasing use of social media during recent years has increased people's knowledge about urological problems. Moreover, with an increase in awareness raises, consultation with physicians also increases.

Aging could boost PSA tests performed among men although some issues can lower their attitude scores. Furthermore, the level of education had a positive effect on mean score of men's knowledge and attitude may be due to the higher level of education among men living in urban areas.

5. Conclusion

Considering the positive effect of people's knowledge on their attitude and their attitude on their performance, by holding training classes and education for people at risk, their attitude and ultimately their performance towards prostate cancer prevention would be improved.

6. Appendix

6.1. Acknowledgment

None.

6.2. Conflict of interest

No conflict of interest to declare.

6.3. Funding support

None.

6.4. Author's contributions

All the authors have the same contribution.



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Table 1: Demographic characteristics of the participants.

Variables	Frequency (%)
Age (Mean±SD)	63.9±8.9
Residency	
Urban	(56.6) 252
Rural	(43.4) 132
Education	
Illiterate	(16.4) 63
Initial	(19.5) 75
middle school	(15.6) 60
Secondary school	(25.8) 99
University	(22.7) 87
Job	
Employee	(17.9) 69
self-employment	(38.5) 148
Agriculture, Livestock	(27.1) 104
Retired	(13) 50
Unemployed	(3.5) 13
Insurance	
Yes	(75.8) 291
No	(24.2) 93
Smoking	
Yes	(50) 192
No	(50) 192
Family history of prostate cancer	
No	(76.3) 293
Father	(5.9) 23
Brother	(10.1) 39
2nd and 3rd degree relatives	(7.7) 29

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Table 2: Correlation between the average knowledge scores, age, residency, and education.

Variable	Knowledge			P value	
	M±SD	Low Frequency (%)	Middle Frequency (%)		Good Frequency (%)
Age					
Less than 60 years	50.2±22.4	53(38.4)	38(27.5)	47(34.1)	<0.0001
60-69	56.3±18.9	26(20.2)	38(29.5)	65(50.4)	
70 ≥ years	58.9±15	13(11.1)	32(27.4)	72(61.5)	
Residency					
urban	56.6±20.2	61(24.2)	59(23.4)	132(52.2)	0. 01
rural	51.7±18.9	31(23.5)	49(37.1)	52(39.4)	
Education					
illiterate	18.2±18	37(26.8)	53(38.4)	48 (34.8)	<0.0001
middle school	56.1±18.9	39(24.5)	34(21.4)	86 (54.1)	
University	60.1±21.4	16(18.4)	21(24.1)	50 (57.5)	

Table 3: Correlation between mean score of attitude demographic characteristics.

Variable	Attitude (Mean±SD)	P value
Age		
Less than 60 years	77.2±12.8	<0.0001
60-69	74.5±11.9	
70 ≥ years	71.2±8.6	
Residency		
Urban	75.6±11.9	0.003
Rural	72.1±10.6	
Education		
Illiterate	71.9±10.9	0.001
Middle school	74.8±11	
University	77.6±12.8	

Table 4: performance status among participants' demographic characteristics.

Variable	Performance status		P value
	Good Frequency (%)	Bad Frequency (%)	
Age			
Less than 60 years	38 (27.5)	100(72.5)	<0.0001
60-69	60(46.5)	69(53.5)	
70 ≥ years	67(57.3)	50(42.7)	
Residency			
Urban	124 (49.2)	128(50.8)	0.001
Rural	41(31.1)	91(68.9)	
Education			
Illiterate	56 (40.6)	82(59.4)	<0.0001
Middle school	63(39.6)	96(60.4)	
University	46(52.9)	41(47.1)	

