



# Knowledge Level About Prostate Cancer Screenings in Turkey

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Received 2018 June 04; Revised 2018 June 20; Accepted 2018 June 29.

## Abstract

**Background:** Prostate cancer is one of the most common cancers among men.

**Objectives:** This study aims to identify the knowledge level regarding prostate cancer screenings in men aged 40 and over.

**Methods:** This study is an analytical descriptive study. It was conducted with 2224 participants in Agri, Turkey between April 2017 and July 2017. Data were collected using the personal identification form and the knowledge test about prostate cancer screenings.

**Results:** The average age of the participants was found  $54.61 \pm 11.59$ . An analysis of knowledge test categorical score distribution showed that 93.7% of the participants had a low knowledge level regarding the issue. A negative and statistically significant relationship was found between age and mean scores for the knowledge test about prostate cancer screenings ( $p < 0.01$ ).

**Conclusions:** Participants' knowledge level regarding prostate cancer screenings was found to be low. Therefore, men aged 40 and over should be informed about prostate cancer screenings specifically by healthcare personnel and researchers or through media sources.

**Keywords:** Prostatic Cancer, Knowledge, Men's Health, Turkish

## 1. Background

Prostate cancer is the second most prevalent malign neoplasm among all the other cancer types (1). Every year 200000 men are reported to be diagnosed with prostate cancer in the United States of America. Prostate cancer is also the most frequently diagnosed cancer type and second prevalent cancer type that causes death (2). As for Turkey, the ministry of health data show that prostate cancer incidence is 37.6 in one 100000, and it is reported to be the second most prevalent cancer type. It also forms 28% of all cancer types in men (3, 4).

Although there are many different views, improvements in new screening tests and treatments since the beginning of 1990s have led to significant improvements in prostate cancer incidence and diagnosis phase and mortality (5, 6). However, prostate cancer diagnosed in late stages could become mortal (4). Two methods used in the early diagnosis of prostate cancer are prostate examination and PSA level, which is measured by a blood test (7-10). Prostate cancer is detected at a rate of 90% with the use of prostate specific antigen test (PSA), and 40% of the cases are diagnosed with high-risk prostate cancer (1-3). According to the PSM and screening tests guide recommended in the ministry of health, Turkish public health institution family practice in Turkey, men over 40 who had prostate can-

cer history in the family and men over 50 who had no family history should be informed and referred to an urologist for early diagnosis and prevention (11).

There are several studies that examine the factors affecting men participating in prostate cancer screenings. Participation in the screenings decrease due to factors such as lack of health insurance, high perception of obstacles, and lack of motivation. Beside these, lack of knowledge regarding screenings is an important factor that affects participation in screenings (3, 12, 13).

## 2. Objectives

Hence, the present study aims to identify the knowledge level of men aged 40 and over regarding prostate cancer screenings.

## 3. Methods

The present study, which utilized an analytical descriptive study was conducted between April 2017 and July 2017 with a view to identifying knowledge level of men aged 40 and over regarding prostate cancer screenings.

### 3.1. Patient Selection

The target population of the study included men aged 40 and over living in Agri. The study utilized convenience sampling method. The sample was formed with 2224 people who applied to family health center between April 2017 and June 2017 and volunteered to participate in the study.

### 3.2. Study Measures

The personal identification form and the knowledge test about prostate cancer screenings were used as data collection tools. Data were collected by the researchers through face to face interviews conducted with men aged 40 and over.

1. Personal identification form: the form consists of 15 questions that aim to find answers to the questions regarding age, education level, marital status, health insurance, previous prostate examination/PSA measurements, and presence of someone with prostate in family or relatives.

2. The knowledge test about prostate cancer screenings: the knowledge test about prostate cancer screenings is composed of 12 questions. It was developed as a knowledge test by Weinrich et al. (13). The researchers then performed the necessary tests and reported that the test was reliable and valid. KR-20 co-efficient of the original form was found as 0.77. The knowledge test consists of items related to obstacles (item from 9 to 12), symptoms (2nd and 4th items) risk factors (1st and 3rd items), adverse effects (items from 6 to 8), and screening age (5th item). Items are marked as “yes” (right), “no” (wrong), and “I do not know”. “I do not know” answers are evaluated as wrong answers (no scores are given for these items). Answers to 8 questions should be marked as “yes” (items 1, 2, 4, 5, 6, 7, 11, and 12), and answers to 4 questions should be marked as “no” (items 3, 8, 9, and 10). Scores to be obtained from the knowledge test range between 0 and 12. Higher scores indicate higher knowledge levels. Weinrich et al. (13), stated that individuals who score 7 and lower in the test have “low knowledge level”, those who score between 8 and 10 have “moderate knowledge level”, and those who score between 11 and 12 have “high knowledge” level. The test could be completed in less than 5 minutes. Turkish validity and reliability was performed by Capik and Gözüml. KR-20 coefficient of the Turkish knowledge test about prostate cancer screenings was found 0.69 (14). KR-20 coefficient in this study was found as 0.50.

### 3.3. Data Analysis

Data were analyzed using SPSS statistical package programming using numbers, percentages, mean scores, Mann-Whitney U, Kruskal-Wallis, and Spearman correlation tests.

## 4. Results

The average age of the participants was found as  $54.61 \pm 11.59$ . Of all the participants, 83.4% were married and 58.9% graduated from primary school. It was also found that 83.3% did not have prostate examination before, and 88.9% did not get PSA test done. A total of 59.1% of those who had prostate examination and got PSA test done did so within the last 1 year, 87.7% did not have anyone with prostate cancer in their family, and 85.8% did not know anyone with prostate cancer. A total of 79.1% did not have any prostate-related diseases, and 44.3% of those who experienced problems related to prostate did something about it, which included seeing a doctor (42.7%) and receiving medication (41.7%). Findings also show that 34.4% of the participants do not think of having prostate examination or participating in screenings; 37.7% are not sure about this issue; and 61.2% do not find prostate examination embarrassing (Table 1).

Findings show that the knowledge test about prostate cancer screenings mean score was  $4.05 \pm 2.14$ , and the scores range between 0 and 11. Categorical score distribution of the knowledge test revealed that 93.7% of men had a low knowledge level on this issue (Table 2).

The total mean scores for the knowledge test about prostate cancer screenings were statistically significant in those who had prostate examination and got PSA testing done before, those who knew someone diagnosed with prostate, those who thought about having prostate examination or participating in screening within one month, and those who did not find prostate examination embarrassing (Table 3).

A negative and statistically significant relationship was found between age and knowledge test mean score for prostate cancer screenings (Table 4).

## 5. Discussion

This study, which investigated the knowledge level about prostate cancer screenings, found that prostate cancer screenings knowledge level did not change according to education level. Winterich reported that education level was an important factor that affected the knowledge level regarding prostate cancer (15). Capik and Gözüml (16) found that knowledge levels of those who are literate, but did not receive an education was lower than those who graduated from primary school, high school, and higher education levels. Kabore et al. (17), reported a strong relationship between education level and knowledge level about prostate cancer. It is somewhat expected that people with higher education levels are more knowledgeable

Table 1. Descriptive Features of the Participants (N = 2224)<sup>a</sup>

Variables	Values
<b>Marital status</b>	
Single	92 (4.1)
Married	1854 (83.4)
Widower	278 (12.5)
<b>Education level</b>	
Uneducated	134 (6.0)
Primary school	1311 (58.9)
High school	610 (27.4)
University	169 (7.6)
<b>Prostate examination experience</b>	
Yes	372 (16.7)
No	1852 (83.3)
<b>Getting PSA test done before</b>	
Yes	247 (11.1)
No	1977 (88.9)
<b>Presence of someone with prostate cancer in family or relatives</b>	
Yes	273 (12.3)
No	1951 (87.7)
<b>Presence of someone with prostate cancer among acquaintances</b>	
Yes	315 (14.2)
No	1909 (85.8)
<b>Previous diseases related to prostate</b>	
None	1759 (79.1)
Prostatic hypertrophy	223 (10.0)
prostatitis	182 (8.2)
Other	60 (2.7)
<b>Attitudes towards the problems related to prostate cancer</b>	
I experienced problems, but did not do anything	259 (55.7)
I experienced problems and did something	206 (44.3)
<b>Things done by those who experienced problems about prostate</b>	
Surgery	29 (14.1)
Seeing a doctor	88 (42.7)
Medication	86 (41.7)
PSA measurement	2 (1.0)
Probing	1 (0.5)
<b>Thinking of having prostate exam or participating in screening in the future</b>	
No	766 (34.4)
Not sure	839 (37.7)
Yes, within one month	167 (7.5)
Yes, within 3 months	112 (5.0)
Yes, within 6 months	144 (6.5)
Yes, within 1 year	196 (8.8)
<b>Finding prostate examination embarrassing</b>	
No	1360 (61.2)
Yes	864 (38.8)
<b>Last prostate examination or PSA test</b>	
1 year or less	205 (59.1)
13 to 60 months ago	86 (24.8)
61 to 120 months ago	37 (10.7)
More than 10 years ago	19 (5.5)
<b>Age</b>	54.61 ± 11.59 (min: 40, max: 102)

<sup>a</sup> Values are presented as No. (%) or mean ± SD.

**Table 2.** Knowledge Level Total Mean Scores and Categorical Score Distribution About Prostate Cancer Screenings

	Values
<b>The knowledge test categorical score distribution, No. (%)</b>	
High (10 - 12)	9 (0.4)
Medium (8 - 9)	132 (5.9)
Low ( $\leq 7$ )	2083 (93.7)
<b>The knowledge test about prostate cancer screenings, mean <math>\pm</math> SD</b>	4.05 $\pm$ 2.14 (min: 0, max: 11)

about prostate screenings. These people are thought to access information more easily.

Capik and Gozum (16) found that the prostate cancer knowledge levels were higher in those who got their PSA levels measured and who had a positive family history. A number of studies show that those who have someone with prostate cancer in their family and friends have significantly higher prostate cancer knowledge level (18, 19). The present study found that knowledge levels were higher in those who had prostate examination before, who got PSA test done, who knew someone diagnosed with prostate cancer, who thought about having prostate examination and participating in screening within one month, and who did not find prostate examination embarrassing. Having people around with prostate cancer might have caused people to be more sensitive about the disease and look for more information about it. Similarly, those who had a higher knowledge level and who got PSA test done might have received information from health professionals, which increased their knowledge level scores.

The prostate cancer risk is higher, especially in men aged 50 and over (20). Paiva et al. (21), and Nakandi et al. (22), recommended that trainings about prostate cancer should be provided by health professionals and through official media sources. Studies show that older men have lower knowledge levels about prostate cancer (16, 23). In line with the related literature, the present study found a negative relationship between knowledge about prostate cancer screenings and age. However, another study found no significant relationship between prostate cancer knowledge level and age (24). A study reports that in comparison to young men, older men had higher knowledge levels about prostate cancer (25).

The prostate cancer screening knowledge level of the participants in this study ranges between 0 and 11. A study conducted in Turkey reports the mean score for knowledge about prostate cancer screenings as  $4.85 \pm 2.38$  (16). A review on this issue indicates that knowledge levels were low in many studies (26). In line with the related litera-

ture, knowledge level of the participants in this study was low. The participants might have preferred not to access information due to factors such as males are not defined as a risk group in health services in our country and thus, men's health is not given sufficient importance; due to their social gender roles, men generally prefer not to receive health services unless they have a serious problem; in addition, due to cultural effects, they find prostate examination embarrassing and confidential.

The limitation of the present study is that it was conducted only in one city located in the eastern part of Turkey.

### 5.1. Conclusion

In conclusion, the participants of this study were found to have low knowledge levels about prostate cancer screenings. In this regard, people who have no information about prostate cancer or screenings have limited applications to receive this service. Therefore, informing men aged 40 and over through health professionals, researchers and media sources is very important for the early diagnosis and treatment of prostate cancer. Besides, it is recommended that studies to be conducted in the future should utilize various education materials for prostate cancer and screenings as well as the effects of trainings on attitudes and behaviors.

### Acknowledgments

The authors would like to thank the focus group participants for their time.

### Footnotes

**Authors' contribution:** Senay Karadag Arli and Ayse Berivan Bakan: Study conception/design; Ayse Berivan Bakan and Metin Yildiz: Data collection/analysis; Senay Karadag Arli: Drafting of manuscript; Senay Karadag Arli and Ayse Berivan Bakan: Critical revision for intellectual content; Senay Karadag Arli: Study supervision.

**Conflict of Interests:** The authors declare that there are no conflicts of interest regarding this manuscript.

**Ethical Approval:** Written approval was obtained from the institution where the study was conducted. After the participants were informed about the study, written and verbal approval was obtained from those who volunteered to participate in the study. Ethical approval was obtained from the Independent Ethics Committee of the University and agreed with the ethical principles of the Declaration of Helsinki.

**Funding/Support:** There was no funding needed for this study.

**Table 3.** Distribution of the Knowledge Test Mean Scores About Prostate Cancer Screenings<sup>a</sup>

Variables	Mean ± SD	U/KW
<b>Marital status</b>		KW: 2.818
Single	4.00 ± 2.21	
Married	4.09 ± 2.15	
Widower	3.83 ± 2.05	
<b>Education level</b>		KW: 2.132
Illiterate	3.77 ± 1.99	
Primary school	4.08 ± 2.09	
High school	4.05 ± 2.16	
University	4.12 ± 2.48	
<b>Prostate examination experience</b>		U: 313112.0**
Yes	4.33 ± 2.14	
No	4.00 ± 2.13	
<b>Getting PSA test done before</b>		U: 11.491**
Yes	4.48 ± 2.11	
No	4.00 ± 2.14	
<b>Presence of someone with prostate cancer in family or relatives</b>		U: 255404.5
Yes	4.18 ± 2.13	
No	4.04 ± 2.14	
<b>Presence of someone with prostate cancer among acquaintances</b>		U: 276952.5*
Yes	4.31 ± 2.09	
No	4.01 ± 2.14	
<b>Previous diseases related to prostate</b>		KW: 6.909
None	4.02 ± 2.14	
Prostatic hypertrophy	4.22 ± 2.15	
prostatitis	4.34 ± 2.05	
Other	3.77 ± 2.19	
<b>Attitudes towards the problems related to prostate cancer</b>		U: 25929.0
I experienced problems, but did not do anything	4.17 ± 2.09	
I experienced problems and did something	4.24 ± 2.16	
<b>Things done by those who experienced problems about prostate</b>		KW: 8.687
Surgery	5.31 ± 1.98	
Seeing a doctor	4.26 ± 2.06	
Medication	3.95 ± 2.26	
PSA measurement	4.00 ± 1.41	
Probing	3.00	
<b>Thinking of having prostate exam or participating in screening in the future</b>		KW: 56.367***
No	3.75 ± 2.17	
Not sure	4.03 ± 2.02	
Yes, within one month	4.96 ± 2.19	
Yes, within 3 months	4.42 ± 2.31	
Yes, within 6 months	3.95 ± 2.05	
Yes, within 1 year	4.48 ± 2.16	
<b>Finding prostate examination embarrassing</b>		U: 488815.5***
No	4.30 ± 2.10	
Yes	3.68 ± 2.14	
<b>Last prostate examination or PSA test</b>		KW: 6.755
1 year or less	4.40 ± 2.08	
13 to 60 months ago	3.97 ± 2.19	
61 to 120 months ago	4.76 ± 1.99	
More than 10 years ago	4.95 ± 2.72	

<sup>a</sup> \* P < 0.05; \*\* P < 0.01; \*\*\* P < 0.001.

**Table 4.** Correlation Between Age and Knowledge Test Mean Scores About Prostate Cancer Screenings

Knowledge Test Mean Scores About Prostate Cancer Screenings	
Age	
r	-0.114
P	0.001

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