

## RESEARCH COMMUNICATION

# Why Do Men Refuse Prostate Cancer Screening? Demographic Analysis in Turkey

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### Abstract

Prostate cancer is one of the most common cancers in men, with a high incidence rates in Turkey. However, the early detection and diagnosis rates are considerably lower among Turkish men as compared with their counterparts in Western countries. This fact reflects a lack of awareness and fear of prostate cancer as well as low prevention activities. To reduce the disparities in prostate cancer survival, there is a great need to increase men's participation in screening programs. The present study was performed to assess why men do not seek screening or participate in screening programs, focusing on the demographics of men refusing a free screening program for prostate cancer.

**Key Words:** Prostate - cancer - screening - refusal

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### Introduction

Prostate cancer is one of the most common cancer in men since its worldwide incidence of 25.3 per 100,000 (Nelen, 2007; American Cancer Society, 2007). Prostate cancer is also the common form of cancer in Turkey. It was determined that the incidence rate is 6.1 per 100,000 and mortality rate is of 3.8 per 100,000 among Turkish men (Tuncer, 2007).

Incidence of prostate cancer has been increasing over the last few decades, largely due to early detection procedures. The fear of having prostate cancer can be devastating to men. However, it is most successfully treated when found early. Recent data show that 93% of men diagnosed with prostate cancer survive at least 10 years and 77% survive at least 15 years. Because prostate cancer may not produce warning signs in the early stage, all men age 50 or older who have at least a 10-year life expectancy should be offered a yearly digital rectal examination (DRE) of prostate and the determination of serum prostate-specific antigen (PSA) level. The revised prostate cancer screening guidelines of the American Cancer Society also recommend that prostate cancer screening consisting of a DRE and PSA (Smith et al., 2003).

The early detection and diagnosis rate of prostate cancer is considerably low in Turkey compared with Western countries. This fact could be reflecting the lack of awareness and detection activities of prostate cancer among Turkish men. However, many Turkish men are

refusing to participation the free prostate cancer-screening program although they were previously informed about prostate cancer. The aim of the study is to investigate the demographic characteristics of men who refused to participation the prostate cancer screening program include DRE and serum PSA level detection. It was also evaluated that the reasons behind their decision.

### Materials and Methods

A descriptive non-experimental design was used with a self-administered questionnaire to identify participants' demographics of men for screening program to prostate cancer.

The sample size (n: 747) was determined using the Systematic Random Sampling Method (95 Confidence and 2% Standard Error) among men over 40 years of age who are living in Osmangazi region (n: 3285). All were enrolled in the study in a 20-month period and asked to complete questionnaires and invited to attend public health center to consider having a PSA test and DRE for prostate cancer.

Two different questionnaire forms were applied during the study. The socio-demographic characteristics of subjects were evaluated with 23 questions in first. The second questionnaire contained containing International Prostate Symptom Score Form (IPSS form). Serum PSA level, DRE characteristic, TRUS and TRUS-guided biopsy results were recorded in a third form.

The men completed the questionnaire and were

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screened after first providing written informed consent. The initial questionnaires were designed to be self-administered. In both refusers and attenders, the following topic were examined: background characteristics (age, marital status, educational level, employment status, tobacco, alcohol, diet consumptions; sexual behavior; family planning methods; venereal diseases; family history of cancer or/and prostate cancer).

The questionnaire also contained International Prostate Symptom Score (I-PSS). In general, an IPSS score of 0-7 indicates mild symptoms, 8-19 indicates moderate symptoms, and 20-35 indicates severe symptoms (Barry et al., 1992). In this study prostate symptoms of participants were assessed by scoring.

Serum PSA value and DRE was used for prostate cancer screening. The screening procedure was conducted by a urologist. If the men had any abnormality on PSA value (4.0ng/mL<) and/or DRE, it was proceeded to further investigation (including TRUS and prostate biopsy). Prostate cancers were finally detected in five subjects.

Standard descriptive statistics (e.g. frequencies, means, and standard deviation) were calculated for the demographic, background and medical measures. To compare participants of refused or attended t tests and chi-square analyses were conducted; men with health insurance versus those without insurance, and men with family history.

## Results

Although all of men (n: 747) replied the questionnaire forms, only 35.2% of men accepted DRE (n: 263). Subjects were divided in two groups as refused and attended for analysis. There were some significant differences between the two groups (Table 1). Demographic predictors for participation in free prostate cancer screening were age, age groups, education, and employment status.

Participants in the 40-49 year age groups were less likely to attend for screening than older ages ( $p<0.05$ ) and the level of participation increased with age ( $p<0.05$ ). Men graduating from high school were more likely to go for screening than men with less than high school graduation and college and above ( $p<0.05$ ). Retired men were more likely to participate than employed men ( $p<0.01$ ). There were no significant differences in marital status and health insurance between refused and attended groups. Although participation increased with the I-PSS score, there was no statistical significant association with urinary symptoms (Table 3).

At the end of the free screening of prostate cancer program all the questionnaire forms of refused participants were examined from the point of view "what would make it hard for the men to get free prostate cancer screening". About 51% of refusing participants made no statements for no participation to free prostate cancer screening and 25% got an appointment, but Digital Rectal Examination was not accepted (Table 4). The other barriers to prostate cancer screening include embarrassment for DRE (5.8%) and other reasons.

**Table 1. Demographic Background by Attendance**

Variables	Refused (n=484)	Attended (n=263)	Total (n=747)	X <sup>2</sup> , t,p
Age (mean)	52.4±9.77	53.7±8.32	53.8±9.30	p=0.04
Age groups			X <sup>2</sup> =11.091	p=0.004
40-49 years	225 (46.5)	90 (34.2)	315 (42.2)	
50-59 years	154 (31.8)	109 (41.4)	263 (35.2)	
≥60	105 (21.7)	64 (24.3)	169 (22.6)	
Education			X <sup>2</sup> =6.330	p=0.042
<High school	275 (56.8)	152 (57.8)	427 (57.2)	
High school	127 (26.2)	83 (31.6)	210 (28.1)	
College	82 (16.9)	28 (10.6)	110 (14.7)	
Marital status			X <sup>2</sup> =0.397	p=0.347
Married	467 (96.5)	256 (97.3)	723 (96.8)	
Other*	17 (3.5)	7 (2.7)	24 (3.2)	
Employment status			X <sup>2</sup> = 7.340	p=0.008
Employed	215 (44.4)	90 (34.2)	305 (40.8)	
Retired	269 (55.6)	173 (65.8)	442 (59.2)	
Health insurance			X <sup>2</sup> =0.021	p=0.501
Present	442 (91.3)	241 (91.6)	683 (91.4)	
Absent	42 (8.7)	22 (8.4)	64 (8.6)	

\*Single, divorced, widowed

**Table 2. Family History of Cancer by Attendance**

Variables	Refused (n=484)	Attended (n=263)	Total (n=747)	X <sup>2</sup> , t,p
History of cancer in family			X <sup>2</sup> =0.046	p=0.450
Yes	98 (20.2)	55 (20.9)	153 (20.5)	
No	386 (79.8)	208 (79.1)	594 (79.5)	
Degree of relationship (n=153)			X <sup>2</sup> = 0.262	p=0.696
1*	73 (74.5)	43 (78.2)	116 (75.8)	
2**	25 (25.5)	12 (21.8)	37 (24.2)	
History of prostate cancer in family			X <sup>2</sup> =0.664	p=0.426
Yes	41 (8.5)	27 (10.3)	68 (9.1)	
No	443 (91.5)	236 (89.7)	679 (90.9)	
No. relatives with PC (n=68)			X <sup>2</sup> = 0.010	p=1.000
1***	33 (80.5)	22 (81.5)	55 (80.9)	
2**	8 (19.5)	5 (18.5)	13 (19.1)	

\*Mother, father, sister, brother, daughter or son, \*\* grandfather or uncle) and (others), \*\*\*Father, brother, or son

**Table 3. I-PSS Scores by Attendance**

Variable	Refused (n=484)	Attended (n=263)	Total (n=747)	X <sup>2</sup> , t,p
I-PSS Score			X <sup>2</sup> =5.230	p=0.073
0-7	401 (82.9)	200 (76.0)	601 (80.5)	
8-19	62 (12.8)	45 (17.1)	107 (14.3)	
20-35	21 (4.3)	18 (6.8)	39 (5.2)	

**Table 4. Reasons for Refusal of Free DRE Screening**

	N	%
No explanation	248	51.2
No accept DRE	121	25.0
Embarrassment for DRE	28	5.8
Others	87	18.0

## Discussion

Our goals for this study were to find out understandable reasons of the barriers that men seek prostate cancer screening, to determine demographics, family history and prostate symptoms of refused and attended participants.

Since this screening program was free of charge, we eliminated lack of cost, lack of knowledge, and not having a regular doctor by free charge and informed consent. However, our findings suggest that there are some possible reasons to refusing the participation in prostate cancer screening and few barriers were reported. The current study revealed that in 50-59 years old, high school graduated, and retired men were more likely to participate in prostate screening. Especially, 65.8% (n=173) of retired men participated in screening versus 34.2% (n=90) of employed men. Barriers to prostate cancer screening were found as no accepted DRE and embarrassment for DRE also.

The benefits of prostate carcinoma screening in reducing mortality who participate to screening program is not enough. The motives for men refusing or attending prostate cancer screening are largely unknown. More insight into the motives for refusing or attending, also in relation to background characteristics, is needed to tailor the invitation and screening procedures (Nijs et al., 2000). Socio-demographic characteristics and access issues have been considered a primary explanation for late stage diagnosis and screening rate differences (Tingen et al., 1998). Screening has been associated with race/ethnicity, education and socioeconomic status, a lack of insurance, lower age, being single, with reports of time, access, and awareness problems, and with low levels of physician recommendation. There are, however, two good reasons to consider variables beyond these in understanding differences in prostate cancer screening (Considine et al., 2006; Ward et al., 2004). Factors such as income, knowledge of risk, and level of understanding the etiology and symptoms associated with prostate cancer influenced whether an individual male was screened for the disease (Robinson et al., 1996a; 1996b; Abbott et al., 1998; ). Also barriers to prostate cancer screening include embarrassment, sexual difficulty as a complication of surgery, mistrust, cost, concern about abnormal test results or cancer, not having a regular doctor, lack of cultural sensitivity of programs, and fatalism (Weinrich et al., 2000).

There are conflicting results on concern about the discomfort of the examination as a barrier, with three researchers documenting it as such (Watts, 1994; Myers et al., 1996; Robinson et al., 1996b) and one researcher reporting results showing that the digital rectal examination is not a barrier (Gefland et al., 1995). There are studies with African American men. They identified some barriers before participating in screening: "Being embarrassed," "No transportation," and "Refused to go." "Put it off," "Doctor hours not convenient," "Didn't know kind of doctor," "Didn't know where to go," and "Refused to go." "Making and planning of an appointment" and "Reminders for screening" (McDougall et al., 2004).

There are demographic factors that are also predictive for males in prostate cancer screening. The literature documents, which are related poor participation in prostate cancer screening, having among increased age, lower income and unmarried men (Weinrich et al., 2000; Tingen et al., 1998; Nijs et al., 2000). Barriers to attending prostate cancer screening include embarrassment, sexual difficulty

as a complication of surgery, lack of knowledge, not having a regular doctor, lack of cultural sensitivity of programs and fatalism (Weinrich et al., 2000). There are conflicting results on concern about the discomfort of the examination as a barrier, with three researchers documenting it as such and one researcher reporting results showing that the digital rectal examination is not barrier (Gefland et al., 1995). Most studies fail to eliminate two of the most important barriers for underserved population: cost and lack of knowledge.

Weinrich et al (2000) in the study found that men with family history of prostate cancer or urinary symptoms were more likely to attend to screening than men without family history or urinary symptoms. Nijs et al (2000) found that in refused men, absence of urological complaints was the major reason for not attending; refusers had indeed compared with attendant lower scores-that is, fewer urological complaints-and better symptom-related quality of life. Compared with attenders, refusers had a lower prostate symptoms score on the I-PSS in this study. But we did not found statistically significant participation in free prostate screening with a family history or prostate symptoms.

Two of four reasons of men refused a free prostate cancer screening can be viewed as knowledge of health care barriers: "DRE". These barriers are consistent with previous research that documents. Done properly, DRE may be uncomfortable but should not hurt (Dougall et al., 2004).

While the participation of prostate screening program was free, we found little participation for free prostate cancer screening in this study. Population based screening for prostate cancer is controversial (Reynolds, 1996). It is general conviction that the best compromise is to carry out randomized screening trials that compare screening with no screening and that use prostate cancer mortality as the main outcome (Schröder et al., 1996; Nijs et al., 2000). Cost-utility analysis should be included in an integral evaluation, and also the public health perspective should be taken into account (Stewart-Brown and Farmer, 1997).

There are some limitations in the study. The sample was small, this being the first study related to free prostate cancer screening and barriers in Turkey. Future research needs to examine how we can assist men to overcome the barriers they describe. Future efforts should be directed at increasing awareness about screening procedures for prostate cancer.

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