

## Original Article

**PROSTATE CANCER AWARENESS AND KNOWLEDGE; A STUDY OF ADULT MEN IN LAHORE, PAKISTAN****Bilal Mahmood Beg<sup>1</sup>, Abu Bakar Pasha<sup>2</sup>, Nasir Farooq Butt<sup>3</sup>, Sarah Shoaib Qureshi<sup>4</sup>, Fawad Ahmad Randhawa<sup>5</sup>**<sup>1</sup>M.Phil Scholar at University of Veterinary and Animal Sciences (UVAS), Lahore<sup>2</sup>Business Analyst at Persivia Inc.<sup>3</sup>Associate Professor of Medicine at King Edward Medical University (KEMU)<sup>4</sup>Associate Professor of Medicine at Lahore Medical and Dental College (LMDC)<sup>5</sup>Assistant Professor of Medicine at King Edward Medical University (KEMU)

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**Abstract****Background:** The incidence and prevalence of prostate cancer is increasing in Pakistan in recent years. Prostate cancer is the second most common cancer among men in the whole world.**Methods:** A descriptive cross-sectional study was done using a questionnaire having questions related to symptoms and treatment options of Prostate cancer. A total of 352 healthy males aged 18 years and above were included in the study. Questionnaire was handed over to 102 healthy male attendants of patients presenting to outpatient department, Mayo hospital Lahore. A soft copy was also formatted using google forms and emailed to around 250 men of different age groups studying or working at various public and private sector nonmedical colleges and universities of Lahore. Descriptive statistics including mean, percentages and standard deviation was used to conclude results.**Results:** Out of 352 participants, more than half (55.7%) of the participants had heard of the prostate cancer while the others did not. Only 12.8% participants knew about the early symptoms of prostate cancer. More than a quarter participants (29.5%) were not sure about the treatment options of prostate cancer.**Conclusion:** The overall knowledge and awareness among general public about prostate cancer was poor. There is an urgent need to introduce a public sector awareness campaign for Prostate cancer in Pakistan.**Keywords:** Public awareness; prostate cancer; public health; lahore; Pakistan**Introduction**

One million new cases of prostate cancer emerge in the whole world every year and one third of them result in death (1). The second most common cause of cancer related death in men around the globe is due to prostate cancer. Prostate cancer affects men of older age between 60 to 70 years. The median age for the development and diagnosis of prostate cancer is 66 years (2). At earlier stages the diseases is asymptomatic and diagnosis is done on basis of abnormal prostate specific antigen levels (PSA). Prostate-specific antigen (PSA) is a protein produced by prostate epithelial cells. PSA is an androgen-regulated serine protease and is used as a serum marker for prostate cancer as its levels are increased in Prostate cancer (3). PSA is followed by a digital rectal exam (DRE) or transrectal ultrasound-guided biopsy or sometimes both (2). However, there is a continuous debate about prostate cancer screening using PSA and DRE (4, 5). The evidence of the benefits of using PSA for detection of prostate cancer is

inconclusive (6). The effectiveness of PSA in the diagnosis of prostate cancer is also unclear (4). However, PSA still remains to be the recommended screening test for prostate cancer and other methods of screening such as DRE or ultrasonography are secondary according to the U.S. Preventive Services Task Force recommendation statement (7). The main objective of prostate cancer screening is to decrease deaths due to prostate cancer through early diagnosis, detection and management (7). After the diagnosis of prostate cancer, disease staging is performed to evaluate prognosis and to determine the treatment strategy. There are three ways in which prostate cancer can present in general; Screening of asymptomatic patients (PSA test); Prostate biopsy and investigation of men showing lower urinary tract symptoms; or men having bone pain showing symptoms of metastasis. Prostate cancer is generally misunderstood with BPH and a digital rectal examination (DRE) is performed to rule out benign prostatic hyperplasia along with PSA

testing to completely differentiate between BPH and prostate cancer (9). There is no published data or research on the prevailing knowledge, awareness, attitudes and practices regarding the prostate cancer in Pakistan. There are certain studies performed on the risk, incidence and prevalence of Prostate cancer in Pakistan but no work has been done on the awareness and knowledge among general public about prostate cancer.

According to a study done in Karachi, the largest metropolitan city of Pakistan, the area falls in low risk region for prostate cancer and the reasons behind lower incidence rate are low life expectancy, lack of healthcare facilities, lack of access or availability of diagnostic facilities and lack of public awareness (10). The incidence of prostate cancer in Pakistan is 5.3 per 100,000 that is contrary to what is seen in the western world and low as compared to other Asian countries but number of cases being reported are increasing annually (11). According to another study prostate cancer is less common in Pakistan as compared in the west (12). But the frequency of prostatic cancer is increasing and measures should be taken for the early detection of prostate cancer (13). There is an ever increasing need of introducing public awareness programs regarding prostate cancer and its screening. The study was conducted in Lahore, Pakistan as no such study has been performed before in Lahore. Lahore is the most populous city and the capital of Punjab (14). This study was conducted to investigate the general awareness and knowledge level in general public regarding prostate cancer, its symptoms and causes among common men. Hopefully, the results from this study will give a wakeup call to the healthcare authorities to arrange campaigns and awareness programs to increase the knowledge among Pakistani men about prostate cancer.

### Methodology

It was a descriptive cross-sectional study in which random sampling technique was used. A structured questionnaire on socio-demographic characteristics, knowledge about prostate cancer, including know how of prostate cancer, discussions with General Physician about Prostate cancer, risk factors, symptoms, screening and possible treatments for prostate cancer was developed. The questionnaire was inspired from an anonymous questionnaire tool used in another study in Australia. It was developed following consultation with the literature and it was tested for reliability by six general practitioners (GPs) from the Department of General Practice, Monash University Victoria, Australia (15). A few words were translated into Urdu (local language) so that the participants may be able to understand medical terms. We sent the questionnaire to a senior Surgeon (Associate Professor, Department of Surgery) and an Internist (Professor, Department of Medicine) in King Edward Medical University who approved the questionnaire with some amendments. Sample size was calculated using Raosoft sample size calculator. A total

of 352 healthy males aged 18 years and above were included in the study. Questionnaire was handed over to 102 healthy male attendants of patients presenting to outpatient department, Mayo hospital Lahore. The questionnaire was explained to all the participants and consent was taken from each participant before filling the form. A soft copy was also formatted using google forms and emailed to around 250 men of different age groups studying or working at various public and private sector nonmedical colleges and universities of Lahore. Doctors, medical students, nurses and other paramedical staff were excluded from the study. The survey data was collected between January 2017 and March 2017. The collected data from questionnaires was observed and arranged using Microsoft Excel and SPSS version 20. Descriptive statistics including percentages were used to represent data whereas mean and standard deviation was used to conclude age. Different frequencies were evaluated according to the answers given by the public. The information was summarized into tables and graphs according to frequencies.

### Results

The results were segregated in two age groups as screening and testing is not currently recommended for men under 40 years; a total of 352 participants took part in the survey. Among these participants the majority (64%) were in the range between 18 to 30 years, 6% were respondents were in the range of 31 to 40 years, 12% in range of 41 to 50, 10% respondents in 51 to 60 years and the percentage of participants that were present in age ranges of 61 to 70 years and 70 or more years were 5% and 3% respectively shown in figure 1.

The results were segregated in two age groups: 1) participants having ages within range of 18 to 40 years; 2) participants older than 40 years. Out of 352 participants, 248 (70.46%) participants were present in the range of 18 to 40 years while 104 (29.54%) were older than 40 years. The results are tabulated in Table 1.

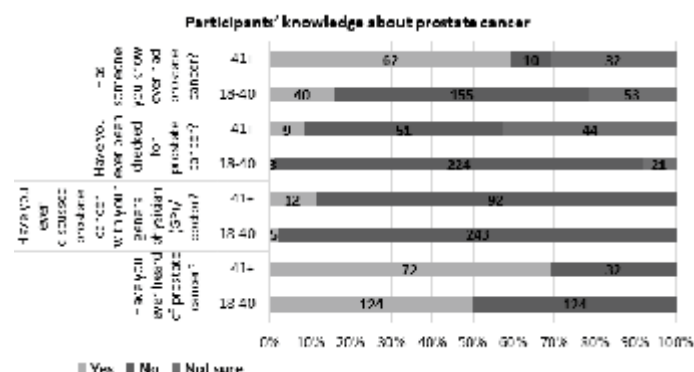
**Table 1: Demographics of the study population**

Characteristics	Variable	Percentage
Age	18-40	248 (70.46%)
	> 40	104(29.54 %)
	Age (Mean $\pm$ SD)	33.95 $\pm$ 14.7
Marital Status	Single	214 (60.8%)
	Married	138 (39.2%)
Education	No formal education	18 (5.1%)
	Primary (Class 1-8)	20 (5.7%)
	Matric (Class 9-10)	57 (16.2%)
	Intermediate (Class 11-12)	79 (22.4%)
	Undergraduate/ Graduate	139 (39.5%)
	Post Graduate	39 (11.1%)

Overall, nearly half (55.7%) of the participants had heard of the prostate cancer while the other half did not. Exactly half of the participants (124) between 18-40 years had heard of prostate cancer while the other half have not.

However in older respondents, 72 (69.2%) had heard of prostate cancer while the rest 32 (30.8%) participants had not heard of it. On inquiring the respondents whether they had discussed prostate cancer with their general physicians (GPs), only 5 (2%) of the younger respondents (age range 18-40 years) while 12 (11.5%) of the older (age 40+ years) respondents had discussed it with their GPs.

When participants were asked if anyone they know had prostate cancer, 40 (16.1%) younger participants responded yes while in older participants 62 (59.6%) replied that they had known someone who had prostate cancer. These results are shown in figure 1 below.



**Figure 1: Participants' knowledge about prostate cancer. Last two questions in the figure does not have "Not Sure" option.**

When these participants were questioned regarding the signs and symptoms of the disease, most of these participants were not sure about symptoms of prostate cancer. However, most likely symptoms were trouble urinating (40.9%), erectile dysfunction (37.5%), groin or genitals pain (32.7%) and blood in urine (30.7%). Only 12.8% of the population was aware of early symptoms of prostate cancer and so they chose no symptom. Early prostate cancer does not have any symptom. The awareness regarding symptoms was high amongst older participants (22.1%) as compared to younger ones (8.9) (table2).

Nearly 14.2% participants were not sure and 6% said that there are no tests available to detect prostate cancer. However, most of the participants believed that prostate specific antigen test was the most suitable test for identifying possible signs of prostate cancer. On the other hand, digital rectal exam (36.1%) was considered as the most uncomfortable test to check for prostate cancer and they would avoid being tested. 15.6% participants are not sure about the tests.

More than a quarter participants (29.5%) were not sure about the treatment option, in older patients the awareness was more as compared to younger patients, since, 39.5% of the younger participants and 5.8% of older participants reported that they are unaware of treatment options.

Most of the participants (35.8%) believed that there is

complete recovery from prostate cancer. Level of concern the individuals had regarding prostate cancer and themselves was found as none (37.2%), small amount (29.5%), moderate amount (21.6%) and high (11.6%).

**Table 2: Symptoms, tests, treatment options, level of concern and outcomes (Questions 5-10 had the option of multiple responses). (N (%)=Number of respondents(percentage of respondents))**

What are the early symptoms for prostate cancer?						
Variable	Trouble urinating	Blood in urine	Erectile dysfunction	Groin pain	No Symptoms	
All Ages N (%)	144 (40.9)	108 (30.7)	132 (37.5)	115 (32.7)	45 (12.8)	
18-40	56 (22.6)	66 (26.6)	72 (29.0)	83 (33.5)	22 (8.9)	
41+	38 (36.5)	42 (40.4)	60 (57.7)	32 (30.8)	23 (22.1)	
What are the tests to check for possible signs of prostate cancer?						
Variable	Digital rectal exam	Blood test	X-Ray	Prostate-specific antigen Test	Not Sure	None
All Ages N (%)	66 (18.8)	62 (17.6)	45 (12.8)	108 (30.7)	50 (14.2)	21 (6.0)
18-40	52 (21.0)	44 (17.7)	30 (12.1)	74 (29.8)	31 (12.5)	17 (6.9)
41+	14 (13.5)	18 (17.3)	15 (14.4)	34 (32.7)	19 (18.3)	4 (3.9)
Which of these tests (if any) would make you so uncomfortable that you would avoid being tested?						
Variable	Digital rectal exam	Blood test	X-Ray	Prostate-specific antigen Test	Not Sure	None
All Ages N (%)	127 (36.1)	23 (6.5)	42 (11.9)	42 (11.9)	55 (15.6)	38 (10.8)
18-40	83 (33.5)	21 (8.5)	35 (14.1)	38 (15.3)	41 (16.5)	34 (13.7)
41+	44 (42.3)	2 (1.9)	7 (6.7)	4 (3.8)	14 (13.5)	4 (3.8)
What are the treatment options for prostate cancer?						
Variable	Surgery	Radiation	Hormone Therapy	High intensity focused ultra sound	Medication	Not Sure
All Ages N (%)	118 (33.5)	122 (34.7)	83 (23.6)	66 (18.8)	147 (41.8)	104 (29.5)
18-40	99 (39.9)	106 (42.7)	81 (32.7)	64 (25.8)	118 (47.6)	98 (39.5)
41+	29 (27.9)	26 (25.0)	2 (1.9)	2 (1.9)	39 (37.5)	6 (5.8)
What do you think the outcome of prostate cancer can be?						
Variable	It is benign/mild	Full Recovery	Life-long treatment	Death		
All Ages N (%)	109 (31.0)	126 (35.8)	89 (25.3)	80 (22.7)		
18-40	83 (33.5)	100 (40.3)	72 (29.0)	58 (23.4)		
41+	26 (25.0)	26 (25.0)	17 (16.3)	22 (21.2)		
What level of concern do you have with regards to prostate cancer and yourself?						
Variable	High	Moderate Amount	Small Amount	None		
All Ages N (%)	41 (11.6)	76 (21.6)	104 (29.5)	131 (37.2)		
18-40	29 (11.7)	54 (21.8)	71 (28.6)	94 (37.9)		
41+	12 (11.5)	22 (21.2)	33 (31.7)	37 (35.6)		

**Discussion**

The awareness and knowledge of prostate cancer has not been studied in Pakistan and no significant data or information is available about the awareness of prostate cancer among general public of Pakistan. A similar study has been performed in Australia (15) whereas similar studies performed in other countries used the services of GPs to complete the questionnaire, face to face interviews, direct interview based survey or focus group

(16, 17, 18). The participants were random public without any personal experience of prostate cancer (15). As a result of our study, around half of the total men (55%) had heard of prostate cancer. There have been similar studies in other countries including Nigeria, South Africa, Uganda, Australia, UK, USA and Canada as well. Relatively smaller number of people have heard about prostate cancer in Nigeria 47.3% (19). In a study conducted in South Africa less than half (45.7%) of the respondents indicated that they had heard of prostate cancer (20) and the percentage of people in Uganda having awareness about Prostate cancer was around 54.1% (21). In contrast the studies performed in Australia and Western countries had better results showing high amounts of awareness among general public about prostate cancer. In Australia the amount of people having awareness of Prostate cancer was incredibly high (87%) (18). Another similar study conducted in UK, Germany, Italy, Spain, the United States and Canada between October and December 2007 with respect to awareness of Prostate cancer, showed that the majority of people (65%) knew or heard about Prostate cancer (22). The knowledge of prostate cancer among general public in developed countries was more as compared to the developing and underdeveloped countries that may be due to the advanced healthcare system and high literacy rate in Western and developed countries. Efforts at government level can help improve the knowledge, education and awareness of general public. The younger men were embarrassed and afraid to discuss the topic with the general physician whereas a fair amount (11%) of older people were likely to have discussed prostate cancer with their General Physician. An incredibly large number of 95% of people of all ages didn't discuss prostate cancer with their doctor ever in our study. Only 11.6% of the people had concerns about prostate cancer and their health. This is alarming and the reason behind such low percentage is lack of awareness and campaigns regarding prostate cancer. Less than half of the people knew about different treatments that may be given in prostate cancer including surgery, radiation, medication and hormone therapy. The perception and knowledge of people towards the outcome of prostate cancer were random, a fair amount of people thought it to be of mild and moderate nature. Few considered it as a death threat and less than half of the participants thought that there is a possible chance of complete recovery. People knowledge about screening methods and options related to prostate cancer was quite low. People only considered medication as a significant treatment option. The participants considered trouble while urinating and erectile dysfunction as the major symptoms of prostate cancer. No symptom and groin pain were not considered as a part of the symptoms or signs related to prostate cancer by few as well. The information obtained depicts that the apparent knowledge and awareness among general public is low.

The gap in public's knowledge highlight the fact that providing knowledge about Prostate cancer and its awareness isn't solely the responsibility of General Physician, steps should be taken to raise awareness as young men are more like to die prematurely because of Prostate cancer due to lack of knowledge (18). The common methods of seeking information regarding Prostate cancer for men are media publicity and General physician's recommendation (23). People may also turn to websites like "Movember" for awareness and knowledge and others may take information from social media i.e. Facebook and twitter (24). The Movember campaign was started in Western countries and Australia in 2003 which was targeted for the younger generations. The numbers of awareness campaigns about Prostate cancer in Australia are growing (24). Similar campaigns targeting the younger audience should be taken in developing countries like Pakistan. The real strength of this study lies in the outcome of significant insights into general men's knowledge about prostate cancer, its symptoms and treatment that was not available in the literature. No similar studies have been performed in Pakistan before and it would prove to be a starting point for future steps. In addition, the results may prove to develop interest of men and GPs in prostate cancer around the world.

### Conclusion

The study revealed poor awareness and knowledge about prostate cancer and a low uptake of prostate cancer screening among Pakistani men. Most of the men in Pakistan are not aware of prostate cancer and the early urinary symptoms are not taken seriously leading to the increasing incidence of prostate cancer.

### References

1. Tao ZQ, Shi AM, Wang KX, Zhang WD. Epidemiology of prostate cancer: current status. *European review for medical and pharmacological sciences*. 2015;19(5):805-12.
2. Shore N. Management of early-stage prostate cancer. *The American journal of managed care*. 2014;20(12 Suppl):S260-72.
3. Balk SP, Ko YJ, Bubley GJ. Biology of prostate-specific antigen. *Journal of clinical oncology : official journal of the American Society of Clinical Oncology*. 2003;21(2):383-91.
4. Brawer MK. Screening for prostate cancer. *Seminars in surgical oncology*. 2000;18(1):29-36.
5. Burack RC, Wood DP, Jr. Screening for prostate cancer. The challenge of promoting informed decision making in the absence of definitive evidence of effectiveness. *The Medical clinics of North America*. 1999;83(6):1423-42, vi.
6. Frydenberg M, Stricker PD, Kaye KW. Prostate cancer diagnosis and management. *Lancet*. 1997;349(9066):1681-7.
7. Moyer VA. Screening for prostate cancer: U.S. Preventive Services Task Force