

Awareness of risk factors and fallacies associated with urinary bladder cancer in our population: A prospective survey

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Abstract

Objective: To determine the awareness of risk factors for bladder cancer and false beliefs associated with this disease.

Methods: This cross-sectional study was conducted at the Kidney Centre, Karachi, from January to February 2015, and comprised subjects who presented to the various in-house clinics. The subjects were interviewed using a questionnaire comprising demographic parameters, level of education and awareness of smoking hazards, knowledge and false beliefs associated with bladder cancer. A pilot study was performed prior to the main study and the questionnaire was redesigned accordingly. SPSS 20 was used for data analysis.

Results: Of the 1,000 respondents, 593(59.3%) were males and 407(40.7%) were females. Moreover, 229(22.9%) respondents were aware of the association between smoking and bladder cancer compared to 858(85.8%) who knew that there is an association between smoking and lung cancer. Besides, 479(47.9%) respondents said that smoking caused tuberculosis. Patients with a higher level of education were statistically more likely to be aware of the association between smoking and bladder cancer, i.e. 91(9.1%) uneducated, 208(20.8%) primary, 182(18.2%) secondary, 222(22.2%) intermediate and 352(35.2%) graduates ($p=0.0001$). Most common fallacy associated with bladder cancer was low intake of water 504(50.4%), followed by multiple sexual partners 362(36.2%).

Conclusion: Most patients were unaware of the relationship between bladder cancer and tobacco smoking.

Keywords: Bladder cancer, Survey. (JPMA 68: 55; 2018)

Introduction

Of all malignancies of the urinary tract, bladder cancer is the commonest. It stands 9th on the list of most common cancers worldwide, 7th in males and 17th in females. It accounts for two-thirds of all urinary tract cancers. There is a prevalence of 2.7 million people who have previously been diagnosed with urinary bladder cancer.¹⁻³ In the first population-based registry of Pakistan, the Karachi Cancer Registry (KCR) from the year 1995 till 2003, carcinoma of the urinary bladder was the 4th-most common malignancy in males and 15th in females. Smoking was the main cause of bladder cancer.⁴ Due to the lack of country-based cancer registries, exact incidence remains doubtful.⁵

The National Cancer Control Programme recommends cancer control strategies, which include control over its causes and consequences.⁴ Bladder cancer is one of those cancers where prevention and early detection are the most effective strategies. In order to have better prevention strategies, it is imperative to know the status of existing knowledge about the disease and its risk factors in a population. There is lack of studies performed

to assess the knowledge of the risk factors for bladder cancer in Pakistan. The current study was planned to determine the awareness of risk factors and false beliefs associated with urinary bladder cancer.

Patients and Methods

This cross-sectional study was conducted at the Kidney Centre, Karachi, from January to February 2015, and comprised subjects who presented to the centre's various clinics. Persons with mental disability and problems in comprehension were excluded. The subjects were interviewed using a questionnaire that comprised demographic parameters like age, gender, residence, and level of education, and questions concerning the subjects' awareness of smoking hazards, smoking-related cancers and the knowledge of bladder cancer. The questionnaire also captured data regarding false beliefs associated with bladder cancer. All participants later received a health education brochure regarding the aetiology of bladder cancer. The self-designed questionnaire was primarily in English, but was read out and translated into Urdu (the local spoken language) by the interviewer concerned. To ensure uniformity and to avoid any discrepancy, a pilot study was performed among 100 participants prior to the study and the questionnaire was redesigned and discussed amongst the interviewers and the faculty. Written consent from subjects and study approval from

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the institutional ethics review committee were acquired before administering the questionnaire. The sample size was calculated with a prevalence rate 36%.⁶ Also, 95% confidence interval (CI) and 3% margin of error was assumed by using OpenEpi online software for sample size determination in health studies.

$$n = Z_{1-\alpha}^2 p (1-p) / d^2$$

z= 1.96, p= 0.36, q= 0.64, d= 0.03

n= 984 sample size

Incomplete or unclear questionnaires were excluded from the study.

Data was analysed using SPSS 20. Mean ± standard deviation (SD) and median (interquartile range) were computed for numerical variables. All categorical variables like gender, residence, diseases and different characteristics of people were presented as frequencies and percentages. Bivariate analysis, e.g. cross-tubular analysis and chi-square test, was applied to find the relationship amongst categorical variables. P<0.05 was taken as statistically significant.

Results

Of the 1,200 questionnaires, 1,000(83.3%) were included after scrutiny. Of them, 593(59.3%) were males and

Table-1: Participants Characteristics n=1000.

Gender	Male	59.3%
	Female	40.7%
Origin	Urban	92.7%
	Rural	7.5%
Level of Education	Uneducated	5.5%
	Primary	5.3%
	Secondary	26.9%
	intermediate	42.7%
	Graduation	19.6%
Awareness of hazardness of Smoking and level of education	Uneducated	70.9%
	Primary	75.5%
	Secondary	94.1%
	intermediate	98.6%
Awareness of hazardness of Smoking	Graduation	94.9%
	Heart Diseases	65.0%
	Bladder Cancer	22.9%
	Lung Cancer	85.8%
	Don't Know	7.7%

407(40.7%) were females. The overall mean age was 35 13 years. Moreover, 927(92.7%) were from urban areas and 75(7.5%) from rural areas. Levels of education were divided into five categories: 55(5.5%) uneducated, 53(5.3%) primary, 269(26.9%) secondary, 427(42.7%) intermediate and 196(19.6%) graduates. Besides, 939(93.9%) said smoking is hazardous to health. Also, 229(22.9%) respondents had knowledge of smoking being a risk factor for bladder cancer compared to 858(85.8%) who knew that there is an association between smoking and lung cancer. Misconception regarding smoking was also found as 479(47.9%) respondents said that smoking caused tuberculosis (Table-1).

It was noticed that patients who had awareness of the relationship between smoking and bladder cancer were more educated which was statistically significant, i.e. 91(9.1%) uneducated, 208(20.8%) primary, 182(18.2%) secondary, 222(22.2%) intermediate and 352(35.2 %) graduates (p=0.0001) (Table-2; Figure).

There was no significant association between bladder cancer and the residence status and gender (p>0.05 each). The most common fallacy associated with bladder cancer was low intake of water 504(50.4%), followed by having multiple sexual partners 362(36.2%). Participants who were aware of association of other risk factors with bladder cancer were chemical factory workers

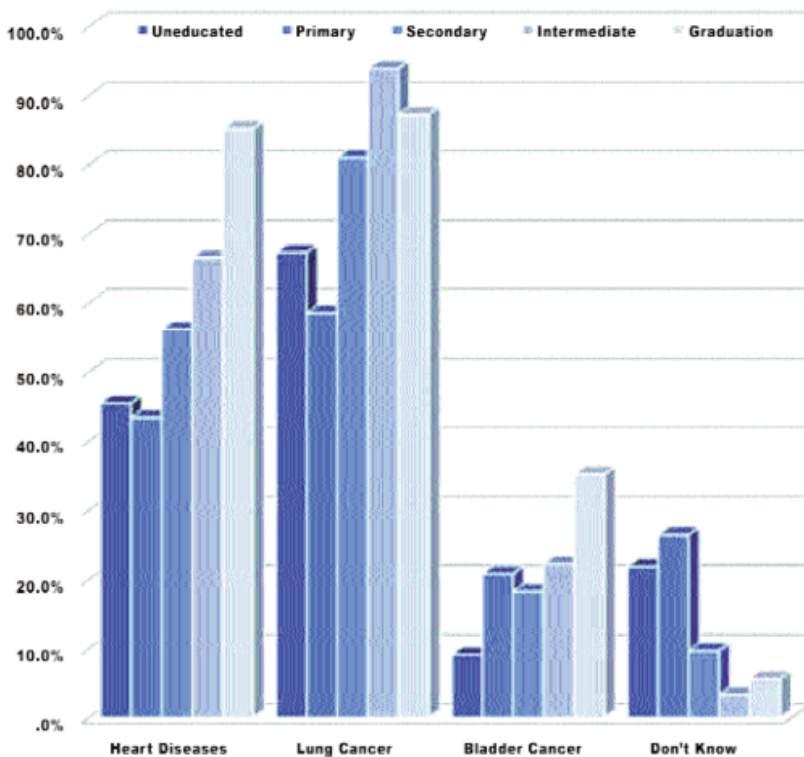


Figure: Level of education and awareness regarding smoking.

Table-2: Awareness of smoking as risk factor and level of education.

	Uneducated	Primary	Secondary	intermediate	Graduation
Heart Diseases	45.5%	43.4%	56.1%	66.5%	85.2%
Lung Cancer	67.3%	58.5%	81.0%	93.9%	87.2%
Bladder Cancer	9.1%	20.8%	18.2%	22.2%	35.2%
Don't Know	21.8%	26.4%	9.7%	3.3%	5.6%

Table-3: Other risk factors of bladder cancer.

Working in Chemical Factory	37.7%
Exposure to Petroleum products	14.5%
Exposure to Paints and Dyes	18.8%

377(37.7%), had exposure to petroleum products 145(14.5 %) and exposure to dye and paints 188(18.8%) (Table-3).

Discussion

Tobacco smoking is the most evident risk factor for bladder cancers. It is found to cause cancer in 50-60% of males and 20-30% of females.⁷ There is a direct relationship between incidence of bladder cancer and the amount of cigarettes used per day and the time elapsed since the start of smoking. Risk of bladder cancer was reduced in an estimated 40% of patients, with the risk drastically reducing within 1-4 years of cessation of smoking and 60% after 25 years of cessation.⁸ Exposure to tobacco smoke at a young age and initiation of smoking at a young age pose a greater risk of bladder cancers in these patients.⁹ The second-most important risk factor for bladder cancer is occupational exposure to certain chemicals, with 20-25% of all bladder cancers owing their origin to occupational exposure. Such occupational exposure is mainly in industries processing paints, dyes, metal, rubbers, textiles, leathers and petroleum products.¹⁰ After 10 or more years of exposure to aromatic amines that are cancer-causing, the risk of developing bladder cancer is significantly bigger.^{11,12}

In Pakistan, the precise incidence and mortality rate due to cancer is difficult to evaluate. Estimates may be higher than the numbers known to the health services since awareness of cancer is low and access to healthcare is limited.^{4,5}

According to the WHO, cancer is the 5th most common cause of death in Pakistan, with an age-standardised death rate of 94.6/100,000 in males and 94.2/100,000 in females.¹³ Moreover, 43.7% of cancers in males and 17.8% cancers in females are associated with tobacco use,⁴ with an annual death rate of 100,000.¹⁴ The prevalence of

tobacco smoking among those aged 15 years or more in 2011 was 23%, accounting for 38% males and 7% females in total population.¹⁴ Primary prevention in the form of tobacco and areca nut control could reduce malignancies by 43.7% in males and 17.8% in females. WHO's estimates put these figures at 45% and 18.54%, respectively.⁴ Government expenditure on tobacco control was only PKR 3.6 million (US\$34,180) in latest available year (2014).¹⁵ Tobacco smoking is found to be the most evident risk factor for cancers of the bladder.¹⁶ The meta-analysis of 216 studies done from 1961 to 2003 on cigarette smoking and cancers showed the risk of developing bladder cancer is significantly associated with both current and former smokers.¹⁷ Retrospective analysis by Fleshner et al. reported that the recurrence rate of bladder cancer was higher in those individuals who continued to smoke than those who had discontinued smoking.¹⁸ Different strategies have been used so far to decrease tobacco use and prevent the consequences associated with tobacco smoking in society. Knowledge of smoking and its dangers is lacking.¹⁹ The main challenge is to provide education to the public. Anti-cancer activities should focus primarily on education to improve awareness and should concentrate on public health education, especially of children, adolescents, and healthcare providers. Mass education and media influence can also play a positive influential role in discouraging tobacco use.

Previous studies have shown that there is poor knowledge regarding the relationship between smoking and bladder cancer. A study conducted in Greece reported that overall 58.4% participants were aware of smoking as a risk factor for bladder cancer while similar studies from Canada and the United States reported prevalence of 45.2% and 36%, respectively.^{6,19,20}

In the current study, only 22.9% participants had awareness of smoking as a bladder cancer risk factor. Participants had better awareness of smoking as lung cancer risk factor and its association with heart diseases. As education level increased, there was more awareness of association of smoking with bladder cancer. This deficiency of knowledge is similar for other risk factors of bladder cancers, like occupational exposure to chemicals. These results are similar to another study which reported that in people with lowest income, lowest level of education, Blacks and Hispanics, knowledge about cancer was the lowest.²¹ Moreover, unlike previous studies, this study was also able to evaluate the fallacies associated with bladder cancer aetiology; the most common misconceptions were low water intake and multiple sexual partners.

The current study had a few limitations as well. Data was obtained from consecutive series of participants who presented to the outpatient department of urology for different reasons. The questionnaire was not distributed on the basis of the presenting complaint. Therefore, participants may relate to different diseases. Also, the participation rate could not be calculated since we did not record who the survey was offered to and who refused it. The actual number of active smokers who responded to our survey was not recorded. The questionnaire was self-designed, its uniformity and reliability was evaluated by the pilot study. This study comprised participants mainly from the urban population as the hospital is located in the centre of the city and represents the private health sector.

Conclusion

The overall awareness was low regarding the risk factors of bladder cancer. Most patients were unaware that tobacco smoking was linked to the development of bladder cancers. Several false beliefs were also associated with bladder cancer. It is crucial to have awareness programmes to educate the public regarding smoking leading to cancers which will help in preventing smoking-related cancers.

Disclaimer: None.

Conflicts of Interest: None.

Source of Funding: None.

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