

ORIGINAL ARTICLE

The assessment of knowledge and attitudes of men in Serbia about prostate cancer and possibilities for its early detection and treatment in 2011: a cross-sectional study

Jelena Petrovic^{1,2}, Miodrag Acimovic^{1,3}, Ana Jovicevic⁴, Dragutin Rafailovic¹, Ivana Petrovic², Zoran Dzamic^{1,3}, Tomislav Pejic^{1,3}, Jovan Hadzi-Djokic⁵

¹Clinic for Urology, Clinical Center of Serbia, Belgrade, Serbia; ²Clinic for Cardiology, Clinical Center of Serbia, Belgrade, Serbia; ³University of Belgrade School of Medicine, Belgrade, Serbia; ⁴Institute for Oncology and Radiology of Serbia, Belgrade, Serbia; ⁵Serbian Academy of Sciences and Arts, Belgrade, Serbia.

Summary

Purpose: To assess the knowledge and attitudes of men in Serbia about prostate cancer (PCa) and possibilities for its early detection and treatment in 2011.

Methods: This cross-sectional study included 407 men of various ages and education levels selected randomly and divided in 2 groups according to age (up to 40 and over 40 years). The assessment of knowledge and attitudes was based on a survey made up of 12 multiple choice questions conducted with direct contact with respondents from October 15th to December 15th 2011 with their voluntary consent. The results were evaluated in the total sample and between the groups.

Results: Patient groups significantly differed according to knowledge about PCa treatment success ($p < 0.001$) and

stage in which PCa is most frequently detected ($p < 0.001$) as well as according to attitudes about community-based interventions for increasing the awareness of PCa ($p < 0.001$). Sixty-one percent of respondents over 50 years hadn't done preventive prostate examination despite recommendations. Ninety percent of all respondents believed the community-based intervention should have been implemented in Serbia to increase the men's awareness of PCa.

Conclusion: The study reported lack of men's knowledge about PCa in Serbia in 2011, while there was a common agreement among men on the necessity of spreading more information about this disease.

Key words: attitudes, cancer, knowledge, men, prostate cancer

Introduction

Prostate cancer (PCa) is one of the most important medical problems facing the male population [1,2]. Since 1985 the number of deaths from PCa has increased in most countries [3], so it remains the most common cancer in males in Europe, excluding skin cancer [2]. In addition, besides the increasing incidence of malignant diseases worldwide, some literature data indicated higher cancer-related mortality in men than in women [4]. According to the last Cancer Registry of Central Serbia, PCa was the

third most common cancer in males in Serbia in 2015 with respect to frequency as well as to mortality [5,6] maintaining the previous trend of five years ago [7,8]. Since many exogenous factors (such as food consumption, pattern of sexual behaviour, alcohol consumption, exposure to ultraviolet radiation, chronic inflammation and occupational exposure) affect the risk of progression from the so-called latent to clinical PCa, it represents an ideal target for exogenous preventive measures [9,10].

Correspondence to: Jelena Petrovic, MD MSc. Koste Todorovica 8, 11000 Belgrade, Serbia.
Tel: +381 668302836, E-mail: jelenapetrovic2212@gmail.com
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Although prostate specific antigen (PSA) used as a blood marker for screening and early detection of PCa is not carcinoma-specific [11], as an independent variable it is a better predictor of cancer than digital rectal examination or transrectal ultrasound [12]. Still, there is no absolute proof that PSA screening reduces mortality due to PCa [13]. Furthermore, one of the potential problems with screening would be overdiagnosis and overtreat-

ment of PCa as in some patients it would never be joined with mortality, not even morbidity, due to the prolonged natural course of disease. Based on the results of two large randomized trials, most of the major urological societies concluded that widespread mass screening for PCa would not be appropriate [14,15]. A baseline PSA determination at the age of 40 years was suggested, upon which the subsequent screening interval may be based [16].

Table 1. The questionnaire

1.	In which place can PCa be among all the malignant tumors in men according to incidence?
2.	In which age does PCa most commonly appear?
3.	Does PCa cause problems right away, as soon as it appears, or after a certain period of time?
4.	What are the first symptoms of PCa?
5.	How much is the treatment of PCa successful?
6.	At which stage of disease is PCa most frequently detected?
7.	Have you heard of PSA test (determination of prostate-specific antigen in blood) as one of the ways for early detection of PCa?
8.	Has a doctor ever recommended you a prostate examination once you turn 50?
9.	Have you ever had your prostate examined preventively, without any symptoms?
10.	If you have any piece of information about PCa, who gave it to you?
11.	In what way would you like to be better informed about PCa?
12.	According to your current knowledge about PCa, do you think there should be a community-based intervention in order to improve the knowledge of men in Serbia about this disease and the possibilities for its early detection and treatment?

Table 2. The most frequent answers to the questions

Questions / Answers (%)						
Whole sample (n=407)	Older men (n=214)	Younger men (n=193)		p value		
In which place can PCa be among all the malignant tumors in men according to incidence?						
2 nd place (43)	2 nd place (44)	2 nd place (38)		>0.05		
In which age does PCa most commonly appear?						
> 50 (71)	> 50 (72)	> 50 (67)		>0.05		
Does PCa cause problems right away, as soon as it appears, or after a certain period of time?						
Don't know (41)	Don't know (31)	Don't know (43)		>0.05		
What are the first symptoms of PCa?						
Urinary flow difficulty (57)	Urinary flow difficulty (60)	Urinary flow difficulty (41)		>0.05		
How much is the treatment of PCa successful?						
Depends on the stage (62)	Depends on the stage (69)	Don't know (48)		<0.001*		
At which stage of disease is PCa most frequently detected?						
Equally detected in all stages (31)	In the advanced stage (32)	In the early stage (19)		<0.001*		
Have you heard of PSA test (determination of prostate-specific antigen in blood) as one of the ways for early detection of PCa?						
Yes (49)	No (51)	Yes (50)	No(50)	Yes (45)	No (55)	>0.05
If you have any piece of information about PCa, who gave it to you?						
Mass media (48)	Mass media (51)	Mass media (33)		>0.05		
In what way would you like to be better informed about PCa?						
Doctor (63)	Doctor (63)	Doctor (60)		>0.05		

*Bold numbers denote statistical significance

Early detection (opportunistic screening) might be offered to the well-informed man with at least 10-15 years of life expectancy [2]. Therefore, it is important to raise the men's awareness about this medical problem since early detection demands a patient's visit to a doctor on time. A great number of studies reported a difference in men's knowledge and attitudes about PCa in various parts of the world [17-30].

The purpose of this study was to assess the knowledge and attitudes of men in Serbia about PCa and the possibilities for its early detection and treatment in 2011.

Methods

This cross-sectional study included 407 men of different ages and education levels selected randomly. The assessment of their knowledge and attitudes about PCa was based on a survey. All the respondents were questioned in the ambulances of the Clinical Center of Serbia when presenting to different specialists. They were divided in two groups according to age. The first group was consisted of men from 21 to 40 years of age (group 1, 193 respondents), while the second group included men over 40 years of age (group 2, 214 respondents). The groups were compared according to respondents' age, education level and the incidence of PCa as well as according to their answers to the questions of the survey. The survey, based on the literature data, was conducted in direct contact with the respondents from October 15th to December 15th 2011 with their voluntary consent. It was composed of 12 closed multiple choice questions (2 to 6 given answers) related to knowledge and attitudes of men about PCa, given in Table 1. The questions 8 and 9 were answered only by the respondents older than 50 years.

Statistics

The statistical analyses were performed using IBM SPSS Statistics for Windows, version 21.0 (Armonk, NY). Numerical continuous variables (age) are shown as mean±standard deviation and compared using the Student's t-test. Descriptive characteristics (education level and answers to the questions) are presented as percentages and compared using χ^2 test. The probability value of <0.05 was considered statistically significant, while the probability value of <0.01 indicated a high level of statistically significant difference between the groups.

Results

The average age of men in the whole sample was 57±14 years. There was a high level of statistically significant difference in age between the respondent groups (group 1: 33±5 vs group 2: 62±10, $p<0.001$). The majority of respondents had high school education (46%), while the remaining had university (25%) or college degree (18%). There were significantly more respondents with

only elementary school or lower education level among men older than 40 (13 vs 2%, $p=0.009$). All respondents suffering from PCa were older than 40, while no PCa was noted among younger respondents (12 vs 0%, $p<0.001$). The most frequent answers to the questions from the survey are given in Table 2 and Figures 1, 2 and 3.

In addition, 40% of all respondents had no idea about the frequency of PCa and only 11% knew the frequency of this disease in their country. Sixteen percent of the respondents thought

Has a doctor ever recommended to you a prostate examination once you turn 50?

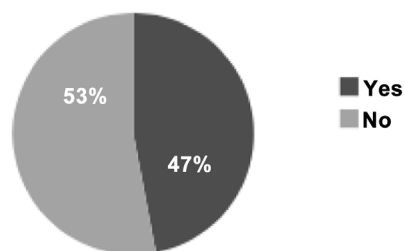


Figure 1. The frequency of prostate examination recommendations in men older than 50.

Have you ever had your prostate examined preventively, without any symptoms?

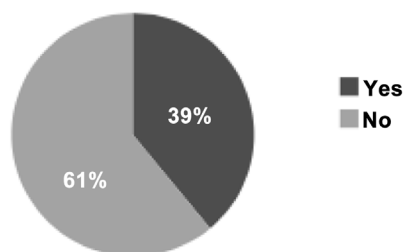


Figure 2. The frequency of preventive prostate examination in men older than 50.

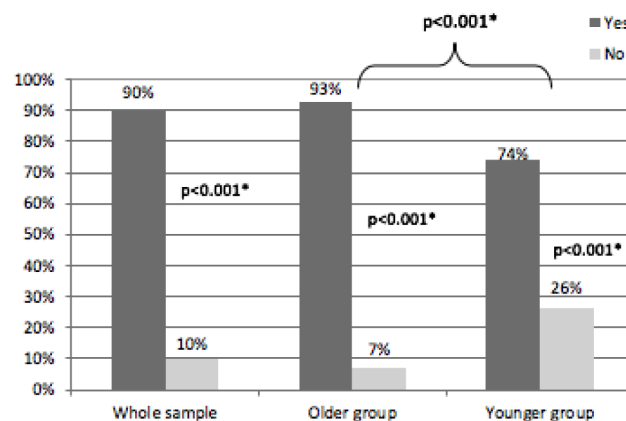


Figure 3. Attitudes of men in Serbia about the necessity of preventive acts to increase the men's awareness of prostate cancer and possibilities for its early detection and treatment.

that PCa was most frequently found in younger men, whereas 13% didn't know in which age PCa most commonly appeared. Twenty-five percent of men thought that the symptoms mostly appeared several years from the beginning of disease and 23% believed the disease would cause problems several months later; 11% of the respondents considered the first symptoms would appear after the very beginning of disease. Thirty-two percent of the observed men didn't know what the first symptoms of PCa could be and believed that there were no rules when it came to stages of disease detection. Twenty-three percent of all respondents didn't know anything about the effectiveness of PCa treatment. Thirty-one percent of them confirmed that they were informed about this disease by doctors and 20% were informed about PCa by a friend suffering from it, while 16% of the whole sample denied being informed about PCa. The rest of the respondents reported other sources of information such as professional literature, internet or their employers. Beside their doctor, a high percent of men chose press material i.e. booklets (56%) as one of the most reliable source of information about PCa, whereas only 24% chose mass media although they were the main source of information at that time. Less than 1% of men said they wouldn't like to be informed about PCa.

Discussion

This study indicated that most of the respondents were not familiar with the frequency of PCa, but almost the half of them identified it as a frequent disease. Similar results were shown in Australia in 2006 [17], while in Barcelona in 2005 most of men identified PCa as a highly occurring disease despite their low education level [18]. The majority of respondents in our study knew that PCa appears most frequently after the age of 50 and no results of similar studies were found to be compared. Approximately an equal number of respondents thought the symptoms could appear after several months or several years since the beginning of PCa, whereas the least number of respondents thought the symptoms appear in the very beginning of disease. Micturition disorder was considered to be the first symptom of PCa by the majority of men, but one third of the whole sample were not familiar with problems caused by PCa at all, and again no literature data for comparison were found.

The greatest part of men knew the effectiveness of PCa treatment depended on the stage of disease, but the majority belonged in the older age group, whereas the younger respondents were less informed about the possibilities for a successful

treatment and didn't know the disease could be even cured if detected on time. This shows that older men are better informed despite their education, since there were more low educated men in the older age group. We got the same results when all men already suffering from PCa were excluded, which shows that men's awareness in this group depended on age, not on their previous health condition. This point could be explained by the fact that older men - being more fragile - they visit urologist as well as their general practitioner more frequently, which can improve their knowledge about PCa. This could also mean that the level of men's awareness about PCa and possibilities for its timely detection and treatment increases with the age in contrast to younger men with the lower risk for PCa development. The study performed in Barcelona [18] also reported that the majority of men older than 50 (about 85%) thought a death outcome could be avoided if PCa was detected on time as well as the study in Brazil [19] which demonstrated that even 95% of men believed that early detection of disease could enable its curing. Even though both studies were performed earlier, the men's awareness of PCa was greater than in our country. Contrary to our results, a USA study [20] showed that younger and middle-aged African Americans who are more likely to develop and die of cancer than any other racial or ethnic group were more knowledgeable about PCa and PCa screening than older men. They were more willing to participate in a clinical trial in the future in contrast to older men who found it risky, although they reported being invited to participate in a clinical trial more often than younger men.

One third of respondents in our survey thought there were no rules when it came to the stages of disease and another third didn't know when it was most frequently detected. Older men more often considered PCa to be detected in an advanced stage, whereas younger men thought the disease was detected in the very beginning, without literature results for comparison. Approximately half of the respondents were familiar with PSA test as one of the ways for early detection of PCa, while the other half has never heard of it, the same as in Barcelona. On the contrary, a study performed in Russia in 2008 [21] showed that only one third of them had heard of PSA test, while in Nigeria less than 10% of men were informed about it [22].

Approximately half of men older than 50 in our study were recommended a preventive prostate examination by doctors once a year when they are over 50, while in the USA 73% of doctors recommended PSA test to their patients in 2009 [23]. The study in Russia [21] disclosed that the majority of male

respondents had their level of PSA tested at some moment in life (77% in Omsk and 67% in Moscow), while in Nigeria [22] none of 130 respondents had ever done PSA test even though they were ready to pay for it, indicating a disproportion between men's attitudes and offered health care possibilities. The study conducted in 2006 in Belgrade, Serbia [24] showed that increase of mortality due to PCa was the highest of any reported increase internationally and contrasted sharply with the widespread decrease in PCa mortality in many developed countries. However, our study suggested that significantly more men older than 50 had never had their prostate preventively examined, even though they were recommended to do so. That fact could explain the lower incidence rate of PCa in Serbia compared to other countries with better economic conditions and health prevention models. That also confirmed that the way of disease prevention was not good enough and needed changes, not referring only to doctors but to the public and media as well requiring a public campaign to raise the men's awareness of this medical issue. In addition, the opinion of 90% of the respondents was a demanding necessity of a community-based intervention to raise the men's awareness over PCa and possibilities for its early detection and treatment. As suggested previously, knowledge and beliefs about PCa and testing predict men's intentions and attendance for PSA testing and prostate biopsy and that is why understanding men's health behaviour is important for the management of patients seeking PSA testing in general practice [25]. Two nationwide observational surveys carried out in France confirmed the impact of awareness on screening behavior [26]. A study conducted in the Netherlands [27] indicated that providing information on PCa screening combined with individualized risk estimation enhanced informed decision-making and may be used for shared decision making on PSA screening of physicians and patients. The results of a Japanese study [28] also confirmed that the degree of examinees' comprehension was insufficient, requiring repeated enlightenment.

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Most men in our study chose mass media as the most present source of information about PCa, which was the same as in a study performed in China in 2007 [29]. However, the majority of them opted for their own doctor as the most appreciated source of information. The study in Australia [17] also showed that 70% of men would like to be informed about PCa by their doctors. This confirms the great confidence respondents have in their doctors as well as the great doctors' commitment and responsibility for this medical problem. Dissemination of decision aids may be a valuable public health tool since they have been shown to improve participants' informed decision-making about PCa screening [30].

The main limitation of the study was the way of data collecting, so the sample was relatively small, but it has to be emphasized that the number of respondents can be compared with the majority of similar studies performed so far.

In conclusion, this study indicated that the male population in Serbia was not informed enough about PCa in 2011. There was common agreement of respondents about preventive actions in order to increase the men's awareness of PCa and possibilities for its early detection and treatment, pointing out the huge role and responsibility of doctors since they were chosen by respondents as the most reliable source of information. Further investigation is necessary to analyze possible changes in knowledge and attitudes of men in Serbia about this issue over time after starting a preventive campaign.

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Conflict of interests

The authors declare no conflict of interests.

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