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Prostate cancer screening awareness among expatriates' adults living in Saudi Arabia: A prospective cross-sectional study

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***Abstract*---**Background: Cancer is the second major cause of death worldwide. Early detection of cancer is a cornerstone of cancer survival. Cancer of the prostate is a major cause of concern for all men, as it offers a serious health risk, particularly to human males over 40 years. The main aim of the current study was to determine the level of awareness of prostate cancer screening among expatriates' adults living in Saudi Arabia. Methods: A prospective cross-sectional study was used during March 2020 and January 2021; 337 expatriates' men were selected using a convenient sampling from shopping centers and coffee shops. A structured questionnaire designed included 16 questions, the first 4 questions designed to know the demographic features, while the other 12 questions concerned with the level of knowledge about PC and the level of awareness regarding PC screening. Results: Collected data revealed that 259 (77%) of the study participants did not have any information in regards to prostate cancer and prostate cancer screening methods. Conclusion: More than half of expatriates' adults' men have poor knowledge in regard of prostate cancer and screening. Therefore, Special attention should be paid for raising awareness about male prostate cancer and prostate cancer screening.

***Keywords*---**social media, prostate cancer, knowledge, expatriates. men.

Introduction

Prostate cancer (PC) is one of the most common tumors in men worldwide, affecting the prostate gland (Kucera et al., 2020). PC is the fourth most frequent malignancy in men worldwide and the second major source of cancer-related fatalities (Rawla, 2019). ACS (American Cancer Society) clarified that cancer of

prostate will be detected in one out of every 41 American men (DeSantis et al., 2019; Siegel et al. 2019). Between January 2001 and December 2008, 1739 cases of cancer were documented in Kingdom Saudi Arabia, according to the Saudi Cancer Registry. The eastern region, Riyadh, and Makkah, had the highest prevalence (Alghamdi et al., 2018).

Prostate cancer is the leading cause of death worldwide and locally, according to all historical data. Regular screening and examinations are some of the most significant aspects of preventing prostate cancer. The digital rectal exam (DRE) and prostate-specific antigen (PSA) are two types of screening that are routinely utilized in clinical practice (DeSantis et al., 2019). DRE is strongly recommended for males over forty years old who have a family history of prostate cancer or who have risk factors for prostate cancer, as well as men over fifty who have no positive history (DeSantis et al., 2019).

Furthermore, evaluation of PSA range endorsed for men between 50 and 70 years (Siegel et al. 2019). PSA is a fairly sensitive marker; yet, because of the misleading rise in some benign prostatic illnesses, its specificity in prostate cancer is not particularly high. Prostate cancer has been down staged in the United States as a result of screening, with over 90% of men first presenting with a localized and potentially curable disease (Arafa & Rabah, 2017).

In advanced countries, the possibility of malignant tumors is more than twice as high as in underdeveloped countries. In underdeveloped countries, most illnesses are observed to be miserable at the late stage of tumors, highlighting any need for training and better screening programs (Adibe et al., 2017; Tang et al., 2020). In addition, past research proves that medical attention and screening is often requested at the end stage of the illness owing to shortage of awareness (Baratedi et al., 2020; Awosan et al., 2018).

Limited studies were designed to determine the level of knowledge among expatriate's adults living is Saudi Arabia. Therefore, the main aim of the current study was to determine the level of knowledge in the Kingdom of Saudi Arabia about prostate cancer between the expatriates' men hypothesizing that the level of knowledge among those subjects is low.

Materials and Methods

This study was a cross-sectional study, between March 2020 and January 2021, 390 expatriates' adults of different nationalities employed in different fields of the Eastern Governorate of Dammam in the Kingdom of Saudi Arabia, carried out a transverse descriptive study with a convenience sampling method. Sample size was selected and estimated on the basis of a Raosoft equation with a satisfactory margin error of 5 percent and a level of confidence of 90 percent (Raosoft, 2004). The data was analyzed by using Statistical Package for Social Sciences (Spss, 2013). Descriptive statistics were described using numbers and percentages. For ethical purposes, written informed consent were provided from each participant prior to their participation in the study. Participants that are unable to read English, who are under the age of forty, also who work in the medical sector and

who has a diagnosis of prostate disorder in the past have been excluded from the study.

The excluded group may be more likely to have more information about the disease, and this will result in error. The questionnaire consisted of three parts and was filled in English. The first part is a page containing guidance on the research, intent, confidentiality, voluntary participation and contact details for the main researcher. The second part included demographic information such as age, nationality, profession and educational level. The third part information about the level of knowledge on prostate cancer and screening. One mark was expected to give for correct response and no mark was expected to give for incorrect and 'not confident' answers. Based on the score obtained in this section, the level of knowledge was rated as low (score ≤ 7); moderate (score of 8–10); and high (score of 11–12) (Weinrich et al., 2004). Survey questions were spread in shopping centers and city centers on weekends during the afternoon and evening periods of the weekdays.

results

A total of 390 expatriates' men took part in the study. After inclusion and exclusion criteria were taken into account, 53 (14 %) expatriate males were removed for the reasons mentioned: 12 subjects had a previous diagnosis of prostate cancer, 16 subjects were below the age of 40 years, 19 subjects did not finish the survey questions, and 6 were disregarded because all answers were similar. Finally, data for 337 participants were included in the study review, suggesting a rate of response of 86 percent. Out of the findings of the current analysis are shown in Table 1-2 and Figure 1-2.

Table 1. Socio-Demographic data among 337 expatriates' men

Age in years	Number (n)	Percentage (%)
40-45	139	41.24
46-49	156	46.29
> 50	42	12.46
Nationality		
Jordanian	18	5.34
Egyptian	156	46.29
Indian	189	39.17
Syrian	5	1.48
Tunisian	11	3.26
Moroccan	15	4.45
Profession		
Maintenance worker	66	19.58
Accountant	85	25.22
Cleaner	87	25.81
Teacher	59	17.50
Engineer	8	2.37
Driver	32	9.49
Educational Level		

Preparatory certificate	140	41.54
Secondary certificate	163	48.36
Undergraduate certificate	21	6.23
Graduate certificate	13	3.85

Table 2. Knowledge of Prostate Cancer and Prostate Cancer Screening among 337 expatriates' men

Questions	Yes	No	Not Sure
Prostate Cancer symptoms			
Younger men are more likely to get prostate cancer than older men.	100	127	110
A man can have prostate cancer and have no problems or symptoms.	70	170	97
Prostate Cancer risk factors			
Men who have several family members (blood relatives) with prostate cancer are more likely to get prostate cancer.	110	103	124
Frequent pain often in your lower back could be a sign of prostate cancer.	28	132	177
Screening Age Guidelines			
Most 80-year-old men do not need a prostate cancer screening.	87	145	105
Side Effect from Treatment			
Some treatments for prostate cancer can make it harder for men to control their urine.	66	127	144
Some treatments for prostate cancer can cause problems with a man's ability to have sex.	71	139	127
Some treatments for prostate cancer can stop a man from ever driving a car again.	46	45	246
General Knowledge about Prostate Cancer Screening Limitations			
Doctors can tell which men may die from prostate cancer and which men will not be harmed by prostate cancer.	124	56	157
An abnormal Prostate Specific Antigen (PSA) blood test means I have cancer for sure.	210	38	89
I can have cancer and have a normal PSA blood test.	146	98	93
Prostate cancer may grow slowly in some men.	99	160	78

The 337 respondents, 78 (23%) were aware of prostate cancer and prostate cancer screening and 259 (77%) were either unaware or unsure of prostate cancer and prostate cancer screening as shown in Figure 1.

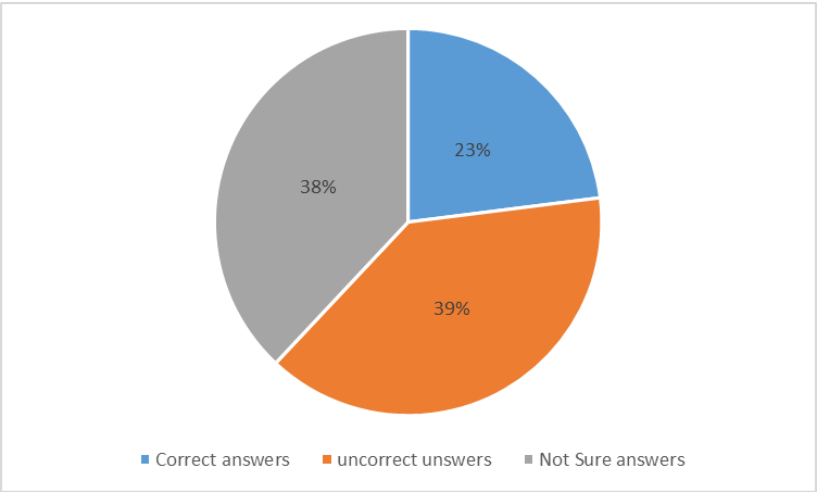

Figure 1. Level of knowledge about Prostate Cancer and Prostate Cancer Screening among 337 expatriates' men.

The score for 337 survey questionnaires ranged from 1-12 as shown in Figure 2 and, based on the score, 35 (10%) subjects were placed in high Knowledge (Score 11-12), 39 (12%) in moderate Knowledge (Score 8-10) and 259 (77%) in low Knowledge (Score 0-7) categories.

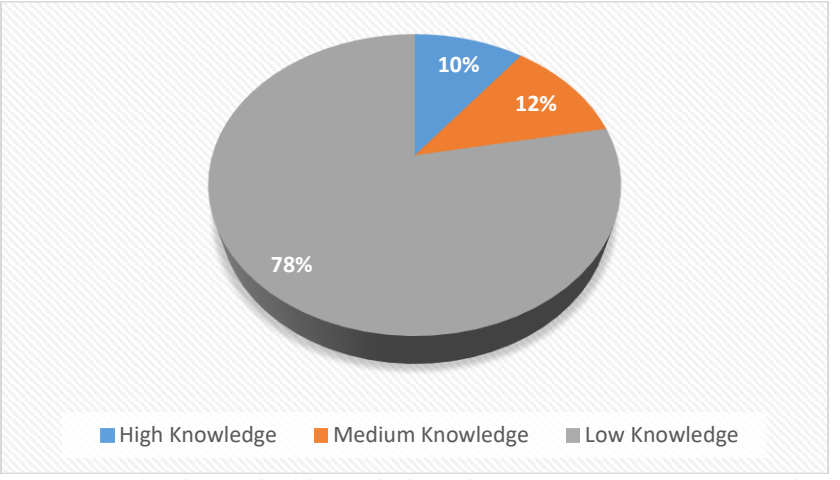

Figure 2. Categorized Level of knowledge about Prostate Cancer and Prostate Cancer Screening among 337 expatriates' men.

Discussion

KSA (Kingdom of Saudi Arabia) is the largest nation in the Middle East, with the Red Sea and the Gulf of Aqaba to the west and the Persian Gulf to the east. Surrounding countries include Iraq, Kuwait, Jordan, Qatar, the Sultanate of Oman, the United Arab Emirates, Yemen, and Bahrain, which are linked by highway to Saudi territory. Approximately 12,92 million expatriates from different countries in the Kingdom of Saudi Arabia (Statistics, 2019) and so, it is

better to understand about this population in order to identify potential laws and regulations for advancement.

Sample of 337 expatriate men performed this research and an appropriate sample was selected with a drop-out rate of 27 percent. Table 1 presents that half (46.29%) of participants in the 46-49 age group and 48.36% had a secondary certificate. From the methodological point of view, the small percentage of higher academic qualifications in the present study can be linked to the ratio of low academic expatriates to higher academic expatriates. The average percentage Knowledge score in this research was low which indicates that participants had limited awareness of prostate cancer and prostate cancer screening. This evidence is similar with findings from studies performed in other parts of the world where the knowledge of prostate cancer and prostate cancer screening was low (Arafa & Rabah, 2017; Arafa et al., 2012). For example, a study by Arafa et al. (2012), showed weak awareness of prostate cancer. Correspondingly, other studies documented a low level of knowledge among participants (Saleh et al., 2015; 2020).

From the other hand, the present study result is inconsistent with the research by Adib et al. (2017) which mentioned that about 57.8% of participants had a good level of knowledge of prostate cancer and prostate cancer screening among 655 academic employees who work in the fifteen faculties of Nigeria. Additionally, other researchers reported higher levels of education level among participants (de Paiva, Motta, & Griep, 2010; Almuhanna et al., 2018). The variations reviewed can be explained by differences in the population groups analyzed, as a study done by the Almuhanna et al. (2018), found that higher levels of academic achievement are markedly associated with the level of Knowledge (P-value < 0.001). The major limitation of the current study was a sample which may not be considered entirely representative of the population researched. Therefore, the findings of the study cannot be universally applied to other communities outside the research environment.

Conclusion

In this study, an overview about low awareness of prostate cancer among expatriates' men in the Saudi Arabia were shown. The level of awareness is low, and approaches need to be built to change this scenario. Social media like television and internet may be useful in this regard.

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Disclosure statement

No potential conflict of interest was reported.

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