

# Knowledge, Awareness and Perceptions towards Prostate Cancer Amongst Male UNIMAS Undergraduates

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## ABSTRACT

Prostate cancer has always been thought as a cancer of elderly men. However, men of any age can develop prostate cancer. Early onset prostate cancer has become an emerging public health concern as there is an increased incidence of prostate cancer amongst men aged  $\leq 55$  years over the last two decades. This quantitative cross sectional study was to assess the knowledge, awareness, and perceptions toward prostate cancer among 322 male local undergraduates in UNIMAS. The results showed that only a small percentage of the respondents (12.1%) had a high knowledge and awareness level and less than half (44.7%) showed good perception towards cancer of prostate. Chi-square results indicated that the year of study and study programmes had significant association with knowledge and awareness towards prostate cancer. This study provides preliminary data which are useful for the planning of community-based program to educate the younger adults regarding prostate cancer as well as a basis for further research.

Keywords: Awareness, knowledge, male undergraduates, perceptions, prostate cancer

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## INTRODUCTION

Prostate cancer occurs when malignant cells begin to multiply and proliferate in an uncontrolled way in the gland cells of the prostate (American Cancer Society, 2019). Cancer of the prostate gland is a major concern to men as it is the second most frequently detected cancer amongst the male population worldwide with an age-standardised rate of 29.3 cases per 100,000 persons per year (Bray et al., 2018). Besides, the rate of prostate cancer is expected to grow proportionately in relation to an increase in overall life expectancy and aging population (Chin et al., 2015). However, prostate cancer had always been thought as a cancer of elderly men but men of any age can develop it. Sutcliffe and Colditz (2013) proposed that prostate glands are more likely to be exposed to carcinogens early in life. Salinas et al. (2014) reported that the incidence of prostate cancer has increased drastically over the last two decades amongst men aged 55 or younger. This makes early onset prostate cancer an important public health issue.

In the Malaysian National Cancer Registry Report 2007-2011 (Azizah, et al., 2015), men of Chinese race had the highest incidence rate of cancer of the prostate (9.0 per 100,000), followed by Indians (6.1 per 100,000) and then Malays (5.3 per 100,000). The majority of the cancer patients were detected at the late stage with poor prognoses, resulting in a much lower possibility of survival as treatment became more complicated (Cancer Research UK, 2018). Men were more at risk when they grew older, had family history of prostate cancer, or were from African and Caribbean descents (Merriel et al., 2018). An institutional study done by Hong et al. (2010) in Malaysia revealed that over half of the cases of prostate cancer were diagnosed at Stage IV of the disease. Late diagnosis of prostate cancer in Malaysia which results in poor survival rates had been attributed to lack of awareness, poor knowledge and attitude regarding cancer (Ismail et al., 2018). Hence, knowledge and awareness has an important role not only in decision making, but also in the prevention of the disease. Nakandi et al. (2013) mentioned that a deficit of knowledge on its risks and screening methods had led to a low screening level of prostate cancer.

There are quite a number of studies regarding knowledge, awareness, attitude, practice and perception towards prostate cancer in other countries, especially in the Western population and amongst the population over 40 years of age. However, similar studies are generally lacking in Malaysia, especially in the Sarawak context. One of the motivations to conduct this study was the ethnic differences between East and West populations. Also, past studies suggested that more effort need to be done to teach younger men regarding prostate cancer and general health (Mincey et al., 2017). Therefore, this study aims to provide useful data and additional insight regarding

knowledge, awareness, and perception of prostate cancer amongst young adults that are undergraduates at Universiti of Malaysia, Sarawak (UNIMAS). The findings could be useful for the planning of community-based programmes to educate younger adults.

## MATERIALS & METHODS

A cross sectional study was conducted at the Faculty of Computer Science and Information Technology (FCSIT) and Faculty of Economics and Business (FEB) in UNIMAS. These two faculties were chosen due to a larger population of male local students. These two faculties represented the science and art disciplines of study. Convenience sampling was used to recruit the respondents. The inclusion criteria were local male undergraduates who were willing to participate. Ethical approval was obtained from Research Committee, Faculty of Medicine and Health Sciences, UNIMAS. The aspects of information of the study, assurance of confidentiality of data and informed consent were duly addressed.

The sample size was determined and calculated using the Open Epi, Version 3, open source calculator, SSPropor (Dean et al., 2013) with the formula:

$$n = \frac{DEFF \times Np(1 - p)}{\frac{d^2(N - 1)}{Z_{1-\alpha/2}^2} + p(1 - p)}$$

where  $n$  is sample size, DEFF is design effect for cluster surveys which is 1.0,  $N$  is population size for finite population correction factor which is 1500,  $d$  is precision 0.05,  $Z$  is  $Z$  statistic for a 95% confidence interval which is 1.96, and  $p$  is hypothesized percentage frequency of outcome factor in the population which is 62.1% (Ismail et al, 2018). Therefore, a total of 322 participants with ten percent drop-out rate added to anticipate non-response were taken.

A structured questionnaire in English and Malay version was adopted and modified with the permission to use from Mohammad Fadhil et al. (2016). The questionnaire consisted of three sections. Section A is related to socio-demographic characteristics of the respondents. Section B consisted of eight multiple choices questions on knowledge and awareness of prostate cancer scored with a 'Yes' and 'No' response. 'Yes' indicated the correct answer and one-point was given and 'No' indicated the wrong answer and a zero-point is scored. The level of knowledge and awareness is based on the total number of correct answers; a score of five-points and above indicates a good level of knowledge, while a score of four-points and below is considered a poor knowledge level. Section C assessed the perception of susceptibility, seriousness, and benefits of prostate cancer and its screening that was scored with a Four-point Likert scale ranging from strongly disagree to strongly agree. A score of fifteen and above with a maximum score of thirty is considered to have a good perception, whereas score of below fifteen indicated a low perception level.

A pilot study was conducted using the same inclusion criteria. Cronbach's alpha of 0.682 was obtained for the questionnaire. A value of 0.61 to 0.70 is considered desirable for basic research or evaluation studies (Gliem & Gliem, 2003). Data for this study was collected from 24<sup>th</sup> February 2020 until 13<sup>th</sup> March 2020. Online questionnaire using Google form with a cover letter that included the purpose of study as well as the nature of voluntary participation was shared with the respondents. A self-administered questionnaire was also distributed and collected due to the low and slow response rate for the online questionnaire. Data was then entered and analyzed using the Statistical Package for Social Sciences (SPSS) software (v.22.0). Descriptive statistics such as frequency and percentages were used to report the socio-demographic characteristics, levels of knowledge, awareness, and perception of prostate cancer of the respondents. Chi-square tests were used to analyse the association between socio-demographic characteristics with the levels of knowledge, awareness, and perceptions of prostate cancer. A  $p$ -value of less than 0.05 was considered as statistically significant.

## RESULTS

This study achieved a 100% response rate. Most of the respondents were aged 20 to 22 years old ( $n=188$ , 58.4%), Chinese ( $n=151$ , 46.9%), and from Year 1 and Year 2 ( $n=186$ , 57.8%) of their study. Table 1 illustrated the socio-demographic characteristics of the respondents.

**Table 1.** Socio-demographic characteristics amongst male undergraduates.

Variables	n	%
<b>Age</b>		
20 – 22	188	58.4
23 – 25	134	41.6
<b>Race</b>		
Malay	101	31.4
Chinese	151	46.9
Others	70	21.7
<b>Year of Study</b>		
Year 1 and Year 2	186	57.8
Year 3 and Year 4	136	42.2
<b>Faculty Study</b>		
FCSIT	161	50
FEB	161	50

The majority of the respondents (n=283, 87.9%) in this study recorded a low level of knowledge and awareness towards cancer of prostate with a score of 4. Only 12.1% (n=39) had a high level of knowledge and awareness. Table 2 listed the detailed results for the knowledge and awareness towards prostate cancer. More than three quarters of the respondents (n=248, 77.0%) had heard of prostate cancer and about half of the respondents (n=168, 52.2%) had identified the location of the prostate gland correctly. Only 33 (10.2%) respondents mentioned that they knew of persons who had prostate cancer before and none of the respondents had been told whether they had a prostate condition, either a enlarged prostate or prostate cancer.

**Table 2.** Knowledge and awareness towards cancer of prostate amongst undergraduates.

Statement about Knowledge and Awareness towards Prostate Cancer	Yes		No	
	n	%	n	%
Have you ever heard about prostate cancer	248	77.0	74	23.0
Do you know anyone that has had prostate cancer before	33	10.2	289	89.8
Knows the location of the prostate gland	168	52.2	154	47.8
Knows prostate cancer affects which gender	293	91.0	29	9.0
Knows factors could make a person more likely to develop prostate cancer	34	10.6	288	89.4
Have you ever received information from health care professionals about prostate cancer	4	1.2	318	98.8
Are you familiar with symptoms of prostate cancer	46	14.3	276	85.7
Have you been told that you have prostate condition/cancer	0	0	322	100.0

For the perception towards cancer of prostate that measured on a total of thirty-point, slightly over half of the respondents (n=178, 55.3%) scored  $\leq 15$  which indicated a poor level of perception. The remainder of the respondents (n= 144, 44.7%) had a good level of perception. For the perceived susceptibility towards cancer of prostate, most of them disagreed that a person could prevent prostate cancer by not being aware of it (n=181, 56.2%); any male of advancing age could have prostate cancer (n=160, 49.7%), and cancer of prostate was caused by a sexually-transmitted infection (n=159, 49.4%). For the perception of seriousness of prostate cancer, the majority of them disagreed that cancer of prostate was a deadly disease (43.8%); it could not make them infertile (48.1%), and it had no cure (54.3%). As for the perceived benefit on prostate cancer, 43.8% of the respondents (n=141) agreed that undergoing a regular medical check-up would have a great benefit. Further details for the respondents' perception towards cancer of prostate can be found in Table 3.

Chi-square tests showed that levels of knowledge and awareness had significant association with Year of study,  $\chi^2(1, N= 322)= 4.35, p= 0.037$  and study programme,  $\chi^2(1, N= 322)= 5.72, p= 0.017$ . However, there was no significant association between knowledge and perception  $\chi^2(1, N= 322)= 3.02, p= 0.082$ .

**Table 3.** Perceptions towards cancer of prostate amongst undergraduates.

Statement about Perceptions towards Prostate Cancer	SD	D	A	SA
	n (%)			
<b>Perception on Susceptibility</b>				
If I am not aware of prostate cancer, I can't have it.	112 (34.8)	181 (56.2)	28 (8.7)	1 (0.3)
Any male of advancing age can have prostate cancer.	3 (0.9)	160 (49.7)	156 (48.4)	3 (0.9)
Prostate cancer is an infection that can be transmitted sexually.	87 (27.0)	159 (49.4)	75 (23.3)	1 (0.3)
All men are at risk of having prostate cancer.	10 (3.1)	17 (5.3)	231 (71.7)	64 (19.9)
Prostate cancer affects only white people.	195 (60.6)	118 (36.6)	1 (0.3)	8 (2.5)
<b>Perception on Seriousness</b>				
Prostate cancer is a deadly disease.	4 (1.2)	141 (43.8)	132 (41.0)	45 (14.0)
Prostate cancer has no cure.	109 (33.9)	175 (54.3)	38 (11.8)	0
Prostate cancer cannot make me infertile.	60 (18.6)	155 (48.1)	89 (27.6)	18 (5.6)
Prostate cancer does not kill.	10 (3.1)	234 (72.7)	78 (24.2)	0
<b>Perception on Benefit</b>				
I perceive a great benefit in going to the clinic regularly for a medical check-up.	5 (1.5)	130 (40.4)	141 (43.8)	46 (14.3)

## DISCUSSION

A total of 283 respondents (87.9%) in this study had low knowledge and awareness towards prostate cancer but the majority of all respondents (77.0%) had heard of prostate cancer. The rate was higher than to one previous study amongst 80 male staff in a tertiary teaching hospital in Kelantan although in different age population that reported 68.8% had a low knowledge and awareness level and 65.0% had heard of prostate cancer (Mohammad Fadhil et al., 2016). However, results from another study done amongst 168 Malay males from three traditional villages in Negeri Sembilan and amongst 625 male teachers in the Sunyani Municipality revealed that 58.5% and 57.5% of the respondents respectively had a good knowledge level regarding prostate cancer (Ismail et al., 2018; Yeboah-Asiamaha et al., 2017). A small percentage of the respondents (14.3%) reported that they were familiar with the symptoms of prostate cancer and knew the factors more likely to lead to it (10.6%). Slightly more than 10% (10.2%) knew someone diagnosed with prostate cancer and only 1.2% had ever received information from a healthcare provider. The low knowledge and awareness level noted in this study could be due to the younger age of the respondents and lack of accessibility to prostate health information (Campbell & McClain, 2013; Adibe et al., 2017). Campbell and McClain (2013) also suggested that it was unlikely for college students to seek health care providers and gain any education on cancer unless they experienced any significant others being diagnosed with cancer.

In this study, more than half of the respondents (n=178, 55.3%) have a poor level of perception towards prostate cancer. This is consistent with another study that indicated that 53.9% had a negative perception (Adibe et al., 2017). However, Adibe et al. (2017) highlighted that only 13.7% of the staff in the Faculty of Medical Sciences' had a positive perception on prostate cancer; this was unexpected in view of the fact that they were all involved in the medical field. Nonetheless, Mohammad Fadhil et al. (2016) and Yeboah-Asiamaha et al. (2017) found a very high percentage (95.0% and 90.6% respectively) of the respondents who had a good perception on cancer of the prostate which are in contrast with the findings of this study. High perception towards prostate cancer in these studies were due to the respondents being hospital staff with a high level of knowledge on cancer of the prostate (Mohammad Fadhil et al., 2016; Yeboah-Asiamaha et al., 2017). Hence, the low knowledge and awareness and poor perception towards prostate cancer could be due to the respondents in this study being from non-medical fields of study, unlike previous studies (Adibe et al., 2017; Ogunsanya et al., 2017).

Year of study was found to have a significant association with the level of knowledge and awareness towards prostate cancer. The results demonstrated that the number of respondents with higher knowledge and awareness level increased with the year of study and those studied in science discipline. Previous studies found the effect of education on the level of knowledge and awareness on prostate cancer (Ismail et al., 2018; Mofolo et al., 2015; Nakandi et al., 2013). This could be attributed to people with higher level of education being more exposed and alert to health issue (Kabore et al., 2013; Mofolo et al., 2015). People who have a higher level of knowledge and awareness also have more positive perception toward prostate cancer (Yeboah-Asiamaha et al., 2017). Higher percentage of respondents from the science faculty was found to have higher knowledge and awareness level than those in the art faculty; however, the reason for this significant association was not clear. In contrast with previous study (Yeboah-Asiamaha et al., 2017), knowledge and awareness was not found to influence perception toward prostate cancer.

## CONCLUSION

This study found that male UNIMAS undergraduates had low knowledge, awareness, and perception level towards prostate cancer. This could be attributed to being college students who are unlikely to seek for cancer information from healthcare providers unless unnecessary. This study has provided useful information regarding knowledge, awareness, and perception of prostate cancer amongst young adults in Sarawak. However, due to the usage of the convenience sampling method, the findings may not be generalizable to all young adults. Further studies at different geographical areas are recommended. Community-based health education programs targeting younger adults could also be done to create better awareness regarding prostate cancer. These programs could include relevant information on risks factors, symptoms, screening methods and treatment of prostate cancer. The health education and information gained by younger adults would prepare them to recognise prostate cancer in later life.

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