Knowledge, Perception and Attitude of Year 1 Undergraduate Students in the Faculty of Medicine and Health Sciences (FMHS), Universiti Malaysia Sarawak (UNIMAS) on Coronary Artery Disease (CAD)

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ABSTRACT

Coronary Artery Disease (CAD) is a cardiovascular disease where there is plaque buildup in the wall of the coronary artery, an artery that supplies blood to the heart. This disease is also often referred to as coronary heart disease or ischemic heart disease. Globally and in Malaysia, CAD has been known as the most common type of heart disease and the leading cause of death. Hence, this study aims to determine the knowledge, attitude and perception of CAD among the students of the University of Malaysia, Sarawak (UNIMAS). The minimum number of Year 1 FMHS students involved in this study was calculated by using Raosoft Sample Size Calculator software. A Google online form (self- administered questionnaire) that consisted of respondent's characteristics, perception of CAD, knowledge on risk factors and clinical presentation of CAD, and attitude towards the preventive measure of CAD was used to collect the data. The data collected was analyzed by using IBM SPSS Statistics software version 27 while the frequencies, means, standard deviation, and p-value were calculated to achieve the specific objectives of this study. According to the results, out of 200 respondents, most of the respondents were female (76.5%) and participation from medical students (66.5%) was more than the nursing students (33.5%). Overall, females have a better level of knowledge on CAD compared to males. Nursing students have a better level of attitude towards the preventive measure of CAD than medical students while medical students have a higher level of knowledge on other parts of the questionnaire compared to nursing students. There is a significant correlation between the perception of CAD, its risk factors, clinical presentation, and the attitude towards the preventive measure of CAD. Knowledge of CAD clinical presentation and preventive measures has a significant correlation with the gender of the respondents. Meanwhile, the knowledge of risk factors of CAD has a significant correlation with the courses of the students. However, the perception of CAD does not have a significant correlation with both gender and the courses of the students. Furthermore, the results obtained from the study may not represent the level of knowledge regarding CAD on a large scale. Therefore, more research regarding this issue should be conducted more often as it will help to give an even better overview of the level of knowledge about CAD and its association with the attitude on CAD preventive measures among the community.

Keywords: Coronary Artery Disease (CAD), Year 1 Faculty of Medicine and Health Sciences undergraduate students

INTRODUCTION

Coronary artery disease (CAD) is a disease where the myocardium of the heart receives an insufficient amount of blood that carries oxygen. It is grouped under the general cardiovascular diseases which consists of other kinds of diseases that affect the heart and blood vessels. The earliest case of CAD is documented in Egypt where a princess who lived between 1580 and 1550 BC passed away in her early 40s (Allam et al., 2011). It was found that plaque was formed in the blood vessel supplying the heart. This plaque formation is currently known as atherosclerosis. One of the people that describe the term was the well-known artist Leonardo da Vinci (Hajar, 2017). His interest in anatomy was inspired by Marcantonio Della Torre, an anatomy professor. According to Hajar (2017), Leonardo stated that tunics thickening of blood vessels in the elderly restrict the transit of blood.

Prolonged condition of insufficient oxygen supply to the heart will lead to ischemic changes. One of the symptoms of CAD is angina which is usually described as chest pain and discomfort (Hermiz & Sedhai, 2021). The patient may experience pressure or heaviness exerted on their chest, which is accompanied by shortness of breath. Angina then occurs due to an imbalance of oxygen loss and oxygen demand by the heart. When the heart is continuously under ischemic conditions, infarction or the death of cardiac cells and tissue may happen (Hashmi & Al-Salam, 2015). This condition can affect normal heart function and cause complications such as left ventricular aneurysm heart failure (Montrief et al., 2019).

There are modifiable and non-modifiable risk factors of CAD. Modifiable risk factors include smoking, hypertension, obesity, and diabetes while non-modifiable risk factors include family history, age, and gender. A study on the perceptions of patients with cardiovascular disease about the causes of CAD shows that 79% of the respondents can identify at least one of the three main modifiable risk factors and only 7% can name all three (Zerwic et al, 1997). This proved that most of the patients did not know their risk factors. Another study on the disease and risk factor perception among patients with CAD in Kuala Terengganu demonstrated that most of the respondents knew about the modifiable risk factors and yet 52% of respondents had less than 25% knowledge of CAD (Yusoff et al., 1994).

The morbidity and mortality associated with CAD have been dramatically reduced as a result of early detection of risk factors and primary prevention. To minimize cardiovascular risk factors, lifestyle changes such as diet, exercise, and quitting smoking are essential. On the other hand, better treatment of hypertension, diabetes, and hyperlipidemia is required to lowerthe risk of CAD (Regmi & Siccardi, 2021). Generally, predominantly males have CAD compared to females despite the different age groups. In subjects older than 20 years old, 7.9% of men have CAD while women only account for 5.1% (Ferreira-González, 2014).

It is necessary to reduce the growing threat of CAD. Besides that, there is very little research on CAD among medical students in Sarawak, Malaysia. Hence, a study on the knowledge, perception, and attitude of CAD is being conducted at University Malaysia Sarawak (UNIMAS) among the year 1 FMHS students.

MATERIALS AND METHODS

Study design and participants
This research is a cross-sectional study to assess the knowledge, perception, and attitude of University Malaysia Sarawak (UNIMAS) Year 1 undergraduate students from Faculty Medicine and Health Science (FMHS) on Coronary Artery Disease (CAD).

Sample size determination
By using the Raosoft Sample size calculator, the minimum number of respondents needed to be a representative sample for the population of UNIMAS undergraduate students can be determined. The minimum sample size required is 140 with a response distribution of 50 %, for a confidence level of 95% and a margin error of 5%.

Data collection instruments
The self-administered questionnaire consists of five sections. Section 1 was on respondent demographic information which includes name, matric number, gender, and age. Section 2 was on the respondents' perception of CAD. There were 7 questions in this section to examine students' perception of CAD. The mean was used to determine whether respondents' perception of CAD correlate with their knowledge. Section 3 pertains to the respondents' knowledge on the risk factors of CAD, comprising 8 questions. The mean was used to determine whether respondents had good or poor knowledge about the CAD risk factors. Section 4 relates to the respondents' knowledge of the clinical presentation of CAD which consists of 5 questions. The mean was used to determine whether the respondents had good or poor knowledge about the clinical presentation of CAD. Section 5 was about the respondents' attitude towards the preventive measure of CAD and comprised of 6 questions. The mean was used to determine whether the respondents were at a high risk of getting CAD.

Data collection procedure
The questionnaires that were created in the Google Form were distributed to the undergraduate FMHS students of UNIMAS via an online platform and social media. The undergraduate students were selected using simple random sampling. The answers of the respondents were automatically saved in the Google Form once they

had completed and submitted their responses.

Data entry and analysis

The data collected were analyzed by using the Statistical Package for the Social Sciences (SPSS) software. Frequency, mean, standard deviation, and independents sample t-test were used to achieve specific objectives of this study. The total scores from sections 2 to 5 were calculated and evaluated in percentages. The percentage for a good level of knowledge was 50% and above while the percentage for a poor level of knowledge was 49% and below. Spearman correlation test was done to determine the correlation of the perception of CAD, knowledge on CAD risk factors, its clinical presentation as well as the attitude towards the preventive measure on CAD with the age, gender, and disciplines or program enrolled by the students.

RESULT

Demographic

200 students from FMHS Year 1 students had participated in this study. There were 153 (76.5%) female students while 47 (23.5%) of the total respondents were male students. In FMHS, there are only 2 programmes, which are the Medical and Nursing. 133 (66.5%) students were from the Medical programme while the remaining 67 (33.5%) students were Nursing programme students. Most of the respondents (142; 71%) were 20 years old. There were 30 (15%) students who were 20 years old and 24 (12%) were 19 years old. The remaining 4 (2%) students were 22 years old.

Knowledge on CAD

Table 1. Level of Knowledge on CAD among the respondents

Section	n		%	
	Good Knowledge level	**Poor Knowledge level**	**Good Knowledge level**	**Poor Knowledge level**
Perception on CAD	133	67	66.5	33.5
Knowledge on CAD risk factors	141	59	70.5	29.5
Knowledge on CAD clinical presentation	119	81	59.5	40.5
Attitude towards preventive measures of CAD	139	61	69.5	30.5

Based on Table 1, more than half of the total respondents showed a good level of knowledge on CAD with the highest percentage (70.5%) of the respondents having a good level of knowledge of CAD risk factors.

Mean score obtained by the respondents for each section of survey

Table 2.1 Overall mean score obtained based on programme enrolled by the respondents

Section	Overall Mean Score	
	Medical students	**Nursing students**
Perception on CAD	4.00	3.82
Knowledge on CAD risk factors	4.00	3.82
Knowledge on CAD clinical presentation	4.44	4.30
Attitude towards preventive measure of CAD	3.53	3.64

Table 2.1 shows the overall mean score obtained for each section of the survey based on the programme

enrolled by the respondents. Generally, the mean score obtained is higher among the medical students than the nursing students for most sections except for that of the attitude towards preventive measures of CAD. This showed that the medical students have a higher level of knowledge on CAD compared to the nursing students in general.

Table 2.2 Overall mean score obtained based on respondent's gender

Section	Overall Mean Score	
	Female students	**Male students**
Perception on CAD	3.96	3.88
Knowledge on CAD risk factors	3.96	3.88
Knowledge on CAD clinical presentation	4.45	4.23
Attitude towards preventive measure of CAD	4.16	3.84

Table 2.2 shows the overall mean score obtained by the respondents for each section of the survey based on their genders. From the table, it can be seen that the mean score obtained by female respondents is higher than the male respondents, indicating that the female students have better knowledge on CAD than their male counterparts.

Relation between each of the section in survey and age, gender and courses of the respondents

Table 3. Spearman Correlation test results

Parameters	1	2	3	4	5	6	7
1. Age	--						
2. Gender	0.056	--					
3. Courses	- 0.273**	- 0.169*	--				
4. Perception on CAD	-0.127	0.102	0.134	--			
5. Knowledge on CAD risk factors	-0.071	0.069	0.218**	0.647**	--		
6. Knowledge on CAD clinical presentation	-0.075	0.155*	0.093	0.651**	0.673**	--	
7. Preventive knowledge on CAD	-0.040	0.239**	0.088	0.460**	0.406**	0.485**	--

p-value obtained from non-parametric Spearman Correlation
*$p<.05$, **$p<.01$, ***$p<.001$

Table 4 represents the results obtained from the Spearman Correlation Test. Referring to the table, the r value between the age and the other parameters were generally negative (except for that with gender), indicating no correlation between the parameters. This was also the case between gender and the courses (discipline).

DISCUSSION

Most of the respondents in our study were 20 years old (born in 2001). The majority of them were females (153) as compared to males (47). From a total of 219 Year 1 undergraduate students in FMHS, 200 participated in the study survey whereby 133 out of 151 students were from medical courses while 67 out of 68 students were from Nursing courses.

A clinical practice guideline on the prevention of cardiovascular disease published in 2017 stated that

cardiovascular disease has been the leading cause of morbidity and mortality for more than a decade in Malaysia. In the perception on CAD section of our study, the respondents were required to answer a few questions related to the disease. From the results obtained, the mean score obtained for the section were 4.08, with 66.5% of the respondents showing a good level of knowledge on CAD. A similar study was conducted by Islam et al. (2019) where the knowledge among 183 urban school students were 57.9% showing a good knowledge level, 41.5% with average knowledge and 0.5% with poor knowledge of Non Communicable Diseases. This indicates that most of the respondents have some information pertaining to about CAD.

There are lot of risk factors that can contribute to CAD. Hence, there is a section where the respondents were asked about the risk factors of CAD for which the respondents managed to obtain a mean score of 3.95. This was the lowest mean score of all the survey sections. Nevertheless, the majority of the respondents (70.5%) were shown to have good level of knowledge on CAD risk factors. Meanwhile, a study conducted by Zerwic et al. (1997) had a contrasting result which noted that 79% of the respondents could identify at least one of the three main modifiable risk factors and only 7% could name all three, proving that most of the respondents did not know the risk factors associated with CAD.

The mean score obtained for the knowledge on CAD clinical presentation was the highest among the survey sections with a mean score of 4.44, with more than half (59.5%) of the respondents showing a high level of knowledge. This result showed that the respondents were generally well informed regarding the clinical presentation of CAD, despite the smaller percentage of respondents with good level of knowledge. Although our study shows a positive result, research done by Khan et al. (2017) has a different result, in which it was noted that the knowledge of the symptoms and risk factors of the disease was at an unsatisfactory level.

For the attitude towards the preventive measure of CAD, the mean score obtained was 4.09 which indicated that most of the respondents (69.5%) had a good level of knowledge. The result obtained from our study is similar with that of Rosediani Muhamad et al. (2012) which focused on the women population. In that study, it was revealed that the percentage of good level of knowledge, attitude and practice on CAD among the North-East Coast Malaysian women were 55.6%, 55.1% and 51.1% respectively.

In general, the mean score obtained for each section is higher for female students compared to male students. This is because the number of female students is higher compared to male students in the Year 1 FMHS students. A study conducted among rural Malays in Malaysia noted a similar finding where there were more female respondents (346) than male (263) (Nawawi et al, 2002). As for mean score obtained based on the programme enrolled by the respondents, it is higher among the medical students compared to the nursing students except for the section on knowledge on CAD clinical presentation. This was also due to the higher number of medical students compared to the nursing students.

From the Spearman Correlation test, there is a significant correlation between perception of CAD with the knowledge on risk factors of CAD, knowledge of clinical presentation CAD and preventive knowledge of CAD. There is also significant correlation between the programmes taken by the students with their perception on CAD, knowledge of CAD risk factors, its clinical presentation and preventive knowledge on CAD. On the other hand, the knowledge of clinical presentation CAD was significantly correlated with gender, perception of CAD and knowledge on risk factors of CAD. In a similar research (Consoli, n.d.), the results showed that more educated participants have higher risk factor knowledge than less educated participants; this was also contributed by the background of participants. Adopting means to reduce the risk of CAD, particularly by diet change, cessation of smoking, increase in physical activity and blood pressure control can be effective in preventing CAD or managing CAD complications (Masic et al., 2011).

CONCLUSION

The result of this study showed that knowledge on CAD, its risk factor, clinical presentation, and attitude towards the CAD preventive measures amongst Year 1 FMSH students were at a good level. The perception of CAD, its risk factors, clinical presentation, and the attitude towards the CAD preventive measure correlated to each other. The knowledge on CAD clinical presentation and preventive measures were correlated with the gender of the respondents while the knowledge on risk factors of CAD was correlated with the programmes

of the respondents. However, the perception of CAD did not correlate with both gender and the programmes of the respondents. To conclude, the knowledge and perception of CAD affect the attitude of UNIMAS undergraduate students towards the preventive measure of CAD.

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