Awareness regarding Coronary Heart Disease among Bachelor Level Students of a Selected College in Kathmandu

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Abstract

Introduction: Coronary heart disease is characterized by an abnormal accumulation of lipid or fatty substances and fibrous tissue (called atheroma) that blocks and narrows the coronary arteries, depriving oxygen and reducing blood flow to the myocardium. The objective of this study was to find out the awareness regarding coronary heart disease among bachelor-level students of a selected college in Kathmandu, Nepal.

Methods: A descriptive cross-sectional research design was used. The study was conducted in Tri-Chandra Multiple Campus, Ghantaghar, Kathmandu, Nepal. A total of 106 bachelor-level students were included. The data were collected using a self-administered semi-structured questionnaire. Descriptive and inferential statistics were used to analyse and interpret the findings.

Results: Nearly half (47.2%) of the respondents had adequate level of awareness, 40.6% of the respondents had average level of awareness and only 12.2% of the respondents had inadequate level of awareness. There is no statistically significant association of level of awareness with age, sex, ethnicity, marital status and type of family regarding coronary heart disease among respondents.

Conclusions: The students tend to have adequate awareness regarding coronary heart disease. Socio-demographic characteristics do not tend to influence the awareness regarding coronary heart disease among bachelor level students.

INTRODUCTION

Coronary heart disease (CHD) is a condition that arises from the accumulation of fatty substances and fibrous tissue, known as atheroma, within the coronary arteries. This leads to arterial narrowing and restricted blood flow to the heart muscle and impedes its access to oxygen.[1] This can result in ischemia, myocardial infarction and tissue death.[2] To minimize the chance of developing CHD, lifestyle adjustments such as diet, exercise and physical activity, weight loss, smoking, as well as managing hypertension, diabetes, and hyperlipidemia are necessary.[3]

CHD affects globally 32% of all lives, with heart attacks and stroke accounting for 85% of all deaths and 38% of the 17 million premature deaths (before the age of 70) caused by noncommunicable diseases.[4] The number of CHD yearly fatalities in Nepal is around 19,677, accounting for 12.26% of all deaths. Nepal ranks 104th in the world with an age-adjusted death rate of 102.19 per 100,000 population.[5] CHD affects approximately one in every 20 adults aged 20 and above and two out of every 10 CHD-related deaths in 2022 occurred in adults under the age of 65.[6]

Many students had only a basic understanding of CHD, with significant knowledge gaps in areas such as symptoms, causes, prevention, and treatment. The study conducted at Baghdad University among undergraduates showed they have poor knowledge regarding the risk factors of CHD.[7]

Similarly, the study among the students in Makwanpur, Nepal showed that only 48.9 had adequate awareness.[8] Awareness and understanding of CHD has been shown to be influenced by family history of CHD, individual risk profiles, and certain sociodemographic characteristics.[9] Therefore, the present research aimed to find the awareness of students regarding CHD.

METHODS

A descriptive cross-sectional research design was used to assess the level of awareness regarding CHD. The study was conducted in Tri-Chandra Multiple Campus affiliated to Tribhuvan University located at Ghantaghar, Kathmandu, Nepal after taking ethical approval from Institutional Review Committee (IRC) of Nepalese Army Institute of Health Sciences (NAIHS) (Reg no: 923). The study population included Bachelor of Arts fourth year students. Non-probability purposive sampling method was used. The sample size was calculated using Cochran's formula, and the total sample size was 106 students. A self-administered semi-structured questionnaire was developed. The instrument was constructed using simple and understandable English words and included two parts: Part I included questions related to the socio-demographic variables of the respondents and Part II included questions related to awareness regarding CHD. Pre-testing was done among 11 students to check its clarity, sequence, and feasibility. The level of awareness was measured by calculating the percentage of correct answers and classifying it into three categories - Adequate awareness (Score above 75%), Average awareness (Score is 50%-75%) and Inadequate awareness (Below 50%). Formal written permission for data collection was taken from Campus Chief. Informed written consent were obtained from each respondent. Anonymity was maintained by using code numbers. Data were collected in the classroom setting, during their break time and sitting was arranged at a one-meter distance from one another. The collected data was checked for completeness and consistency by the researcher herself before leaving each respondent. Data were analysed using descriptive statistics i.e. mean, number, percentage and standard deviation to describe socio-demographic characteristics, and inferential statistics i.e. Chi-square test was used to measure the association of level of awareness with selected variables using the Statistical Package for Social Science SPSS Version 16.

RESULTS

Among the total respondents, most (78.3%) of the respondents belong to the age group between 20 - 25 years with mean age of 24.04 years and standard deviation ± 2.042. More than half (56.6%) of the respondents were female and most of them (88.7%) were unmarried. Similarly, the majority (60.4%) of the respondents were Brahmin / Chhetri. Likewise, the majority (63.2%) of the respondents lived in a nuclear family.

Table 1: Socio-demographic information of respondents (N = 106)

Characteristics	Number	Percent
Age of respondents (Years) *		
20 - 25 years	83	78.3
25 - 30 years	23	21.7
Sex		
Female	60	56.6
Male	46	43.4
Ethnicity		
Dalit	4	3.8
Janajati	33	31.1
Madhesi	3	2.8
Muslim	2	1.9
Brahmin / Chhetri	64	60.4
Marital status		
Married	12	11.3
Unmarried	94	88.7
Type of family		
Joint	36	34
Nuclear	67	63.2
Extended	3	2.8

*Mean age 24.04 ± 2.042

Table 2 reveals that most (85.8%) of the respondents correctly answered that the narrowing and blocking of the blood vessels that supply blood to the heart is CHD. Similarly, majority (66%) of the respondents were aware that pressure, fullness or tightness in the chest radiating to the neck, jaw, shoulders and arms are the symptoms of CHD.

Table 3 demonstrates that, the majority of the respondents were aware that males are at greater risk, and increasing age and obesity are the risk factors for CHD. Likewise, most (88.7%) of the respondents knew that smoking, high cholesterol, hypertension, diabetes, sedentary lifestyle, stress, processed foods increased CHD.

Table 2: Respondents' awareness on meaning and symptoms of CHD (N = 106)

Characteristics	True		False	
	Number	Percent	Number	Percent
Meaning of CHD Narrowing and blocking of the blood vessels that supply blood to the heart.	91	85.8	15	14.2
Symptoms of CHD Pressure, fullness, or tightness in the chest radiating to the neck, jaw, shoulders and arms.	70	66	36	34

Table 3: Respondents' awareness on risk factors of CHD (N = 106)

Characteristics	True		False	
	Number	Percent	Number	Percent
Risk factors of CHD Increasing age	78	73.6	28	26.4
Being male	65	61.3	41	38.7
Obesity	85	80.2	21	19.8
Eating processed meals *	48	45.3	58	54.7
Smoking	94	88.7	12	11.3
High cholesterol	87	82.1	19	17.9
High blood pressure	84	79.2	22	20.8
Family history of CHD	70	66	36	34
Diabetes	69	65.1	37	34.9
Stress raises blood sugar, blood pressure, and cholesterol levels	91	85.8	15	14.2
Sedentary lifestyle	59	55.7	47	44.3

*False statement

Table 4: Respondents' awareness on preventive measures of CHD (N = 106)

Characteristics	True		False	
	Number	Percent	Number	Percent
Preventive measures of CHD Vigorous exercise such as swimming, cycling, and jogging *	30	28.3	76	71.7
Moderate physical activity like gardening, walking, and household chores.	84	79.2	22	20.8
Yoga and meditation.	88	83	18	17
Controlling blood cholesterol, blood pressure, and diabetes.	92	86.8	14	13.2
Consumption of low salt intake.	83	78.3	23	21.7
Diet high in calories. *	54	50.9	52	49.1
Quitting smoking doesn't lower the risk. *	39	36.8	67	63.2

*False statement

Table 4 shows that, the majority of the respondents knew that vigorous exercise such as swimming, cycling, and jogging, yoga, meditation, low salt intake decreases the incidence of CHD.

Table 5: Respondents' level of awareness regarding CHD

Level of awareness	Number	Percent
Adequate awareness (> 75%)	50	47.2
Average awareness (50% - 75%)	43	40.6
Inadequate awareness (< 50%)	13	12.2
Total	106	100.0

Table 5 represents the awareness of the respondents regarding CHD and Table 6 represents the association between level of awareness with the socio-demographic characteristics of the respondents.

Table 6: Association of level of awareness with selected socio-demographic characteristics

Socio-demographic characteristics	Level of awareness				χ^2 Value	p-value
	Adequate (N = 50)		Average - inadequate (N = 56)			
	No.	%	No.	%		
Age						
20 - 25	38	45.8	45	54.2	0.295	0.587
25 - 30	12	52.2	11	47.8		
Sex						
Female	29	48.3	31	60	0.075	0.784
Male	21	45.7	25	46		
Ethnicity						
Brahmin / Chhetri	29	45.3	35	54.7	0.224	0.636
Others *	21	50	21	50		
Marital status						
Married	5	41.7	7	58.3	0.164	0.685
Unmarried	45	47.9	49	52.1		
Type of family						
Nuclear	36	53.7	31	46.3	3.146	0.076
Others **	14	35.9	25	64.1		

Note: p value > 0.05 = Insignificant association

p value ≤ 0.05 = Significant association

Others * = Dalit, Janajati, Madhesi, Muslim

Others ** = Joint, Extended

DISCUSSION

Regarding demographic findings, among the total respondents, most (78.3%) of the respondents belonged to age group between 20 - 25 years with mean age of 24.04 and standard deviation ± 2.042. More than half (56.6%) of the respondents were females and 43.2% were males. Similarly, most (88.7%) of the respondents were unmarried and 11.3% were married. Likewise, majority (60.4%) of the respondents were Brahmin / Chhetri. And majority (63.2%) of the respondents lived in nuclear family. The highest proportion (11.3%) of the respondent's father have the comorbidity condition hypertension and 8.5% have the comorbidity condition diabetes. Similarly, highest proportion (13.2%) of the respondent's mother have the comorbidity condition hypertension and 9.4% have the comorbidity condition diabetes.

The finding of the present study revealed that the majority (66%) of the respondents were aware that pressure, fullness, or tightness in the chest radiating to the neck, jaw, shoulders, and arms are the symptoms of CHD. These findings are consistent with the study conducted among 69 respondents in Biratnagar, Nepal by Upreti et al[10] where 56.5% and 52.2% of the respondent's answered shortness of breath and chest pain as symptoms of CHD respectively.

Similarly, most (88.7%) of the respondents knew that smoking increases the risk of CHD. This result is consistent with the study conducted among 284 participants in Bali, Indonesia by Suarningsih et al[11] where 89.1% of the respondents were aware that smoking is the risk factor for CHD. Likewise, this study showed that most 80.2% of the students were aware that obesity is the risk factor for CHD. This finding is in contrast to the study conducted among 200 students at Baghdad University, Iraq by Aqeel et al[7] where only 45.5% were aware that being overweight increases one's risk of CHD. Additionally, majority (66%) of the respondents correctly answered that a person is more likely to acquire CHD if they have a family history of CHD. This study is inconsistent with the study conducted among 5767 adults in Kerala, India by Krishnan et al[12] which showed only 18% of them were aware family history of CHD as a risk factor. The finding is in contrast with the study conducted among 2450 students in Turkey by Gunes et al[13] where only 38.3% stated family history of a similar disease as a risk factor of CHD. These variations among various studies may have resulted due to the fact that the studies were conducted among different countries with different geographic and social conditions among different ethnic groups.

In the present study, most (79.2%) of the respondents knew that high blood pressure is a risk factor for developing

CHD. This finding is in congruence to the study conducted among 130 participants at Tribhuvan University, Nepal by Shrestha et al[14] where 76.2% stated that blood pressure as a non-modifiable risk factor of CHD. Additionally, the present study illustrates that the majority (65.1%) of the students were aware that diabetes is the risk factor for CHD. This is in contrast with the study conducted among 200 students at Baghdad University, Iraq by Aqeel et al[7] where 43% stated that excessive blood sugar puts a burden on the heart. Similarly, most (86.8%) of the respondents were aware that controlling blood cholesterol, blood pressure, and diabetes are the preventive measures of CHD. This finding does not correlate well with the study conducted among 69 respondents in Biratnagar, Nepal by Upreti et al[10] where 73.9% of respondents answered controlling blood cholesterol as a preventive measure of CHD. The discrepancy may be due to differences in settings and sample size. Furthermore, the present research illustrates that most (79.2%) of the respondents correctly answered that moderate-intensity physical activities, such as walking, gardening, and housework, can lower one's risk of developing CHD. The finding is somehow consistent with the study conducted among 2450 students in Turkey by Gunes et al[13] where 71.30% of students agree exercise is one of the preventive measures of CHD. Likewise, the awareness level shown in the present study is in congruence with the research conducted among 135 students at Makwanpur Multiple Campus, Hetauda, Nepal[8] where 48.9% had adequate awareness, 38.5% had moderate awareness and 12.6% had inadequate awareness regarding CHD.

The present study showed that there was no significant association of level of awareness with sociodemographic characteristics such as age, sex, ethnicity, marital status and types of family which is consistent with the study conducted among 135 students in Hetauda, Nepal et al[8] where there were not statistically significant association of level of awareness with socio-demographic characteristics. This is also consistent with the study conducted among 200 students in Baghdad University, Iraq by Aqeel et al[7] where there was no significantly significant association of level of awareness with socio-demographic characteristics.

CONCLUSIONS

The study concludes that only around half (47.2%) of the bachelor-level students tend to have an adequate awareness, 40.6% of the respondents had an average level of awareness and just over a tenth (12.2%) of the respondents had an inadequate level of awareness regarding CHD. Socio-demographic characteristics do not tend to influence the awareness regarding CHD among bachelor-level students.

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