RESEARCH ARTICLE

Diabetes Management

Knowledge and practice regarding prevention of myocardial infarction among visitors of Sahid Gangalal national heart center, Kathmandu, Nepal

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ABSTRACT

Background: Cardiovascular diseases (CVDs) are the national burden as Non-Communicable Diseases (NCDs) in Nepal. About 38% were attributed to CVDs among all other NCDs. According to American Heart Association Coronary artery disease mortality rates will double from 1990 to 2020, with approximately 82% of the increase attributable to the developing world. Objective: The objective of the study was to identify Knowledge and Practice regarding Prevention of Myocardial Infarction among visitors. Material and Methods: A simple descriptive cross sectional study design was used for the studies which was conducted in the Sahid Gangalal National Heart Centre with a sample of 101 and were selected by Non-probability purposive sampling technique. The participants were asked semi structured questionnaire for socio demographic information, knowledge and practice. Data was checked for completeness and accuracy and collected data was entered in SPSS Software version 20. Descriptive statistics such as number and percentage were used to describe demographic data and for analysis of the level of knowledge and Practice. To determine association of knowledge with socio-demographic factors chi-square test was used. Besides these, Pearson's correlation coefficient was computed to describe the relationship between knowledge and practice.

Results: The study found out that majority (53.4%) were age more than 30 years, majority (52.5%) were male. Chhetries were in majorities (29.7%) and highest number (79.2%) of Hindus were found. Majority were literate (93.1%); out of them, highest number(78.2%) had above secondary level education. Majority (42.6%) were non-service holders and most (79.2%) were from urban setting. Level of Knowledge was moderate among 62.4% but all of participants had inadequate practice. There was significant association found among education and occupation with knowledge (chi-square 'p' value 0.02). Knowledge and Practice showed significant relationship between them, which indicates that when knowledge increases practice also increases by 36.9%. Conclusion: Level of Knowledge was moderate among majorities but all of participants had inadequate practice despite highest literacy level and majority from urban setting. Although Cardiovascular Diseases as non-communicable is included in the strategic plan of Government of Nepal. Various awareness programs, campaigns are carried out each year, There still need to aware and make Nepalese to practice to prevent such life threatening diseases.

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KEYWORDS

- knowledge
- practice
- prevention
- myocardial infarction
- visitors
- hospital

Introduction

Cardiovascular Diseases (CVDs) are the number one cause of death globally. More people die annually from CVDs than from any other cause. An estimated 17.5 million people died from CVDs in 2012, representing 31% of all global deaths. Of these deaths, an estimated 7.4 million were due to coronary heart disease and 6.7 million were due to stroke. Over three quarters of CVD deaths take place in low- and middle-income countries [1].

According to American Heart Association Coronary artery disease mortality rates will double from 1990 to 2020, with approximately 82% of the increase attributable to the developing world [2].

CVDs are the national burden as Non-Communicable Diseases (NCDs) and major public health issue in Nepal. About 38% were attributed to CVDs among all other NCDs. Cases of NCDs in Nepal began to be noticed only in the second half of the century. CVD was first documented in 1970s with cases of MI [3].

Myocardial Infarction commonly known as heart attack, occurs when blood flow stops to a part of heart causing damage to the heart muscle, risk factors include high blood pressure, smoking, diabetes, lack of exercise, obesity, poor diet, excessive alcohol intake [4].

A study done at Ayub Teaching Hospital, Abbttabad, Pakistan cardiovascular disease is major cause of mortality and morbidity in Pakistan. This study aimed to evaluate the knowledge of modifiable risk factor of cardiovascular disease in acute MI [5].

A cross sectional study done at Yard University of Medical Science, Iran about 85% of Yazd citizens had at least one and 61.1% had at least two coronary artery risk factors. The following data in brackets refer to the males and females respectively. The present study showed obesity in 16.38% of Yazd citizens (9.2 and 24.2%). The prevalence of hypercholesterolemia 12.1% (10.6 and 13.8%), dyslipidemia 58.5% (59% and 57.6%), high blood pressure 25.6% (27.5% and 23.5%), diabetes mellitus 11% (10.48% and 11.5%) and impaired glucose tolerance test 8.5% (7.9% and 9.1%) and cigarette smoking 13.12% (24.45% and 0.5%). Also 43.3% of men and 62.05% of women had excess weight. The prevalence of hypercholesterolemia, dyslipidemia, diabetes mellitus (DM), hypertension (HTN), and abdominal obesity increase [6].

According to the research conducted at Kathmandu among 405 respondents, only 57.8% had adequate knowledge on heart disease. Findings also highlighted the lack of knowledge on high cholesterol diet and diabetes as modifiable risk factors for heart disease i.e., 36.5% and 30.1% respectively. Therefore, it is recommended that awareness raising programs can turn out to be beneficial on prevention of heart disease is correcting in the deficient areas of knowledge regarding preventive measures of heart disease [7].

Myocardial Infarction and other related cardiovascular disease can be prevented to a large extent by a number of lifestyle changes and medical treatment, lifestyle includes increasing intake of whole grain, reducing sugar intake [4].

Methodology

Descriptive cross sectional study was done. The target population was visitors of attending inpatient department of hospital. The target population was visitors of attending inpatient department of hospital. Non Probability sampling technique was used to select study setting and sample population too.

Before starting the study, formal approval was taken from concerned authority of research committee of NINE and written permission was obtained.

The required permission to conduct the study was obtained from Sahid Gangalal National Heart Centre, Bansbari, Kathmandu. Ethical approval was taken from NHRC and Sahid Gangalal National Heart Centre as well. Written consent was taken from each participant and the objectives of the study were explained prior to the study. The participant's desires for participation were highly appreciated, they were not harmed, and confidentiality and beneficence were maintained throughout the study [8].

The data was collected by face to face interview technique. Before interviewing the participants; objective of the study was made clear to the participants and written informed consent was taken with each participant. They were asked questions one by one and filled by the researcher self [9]. The interview was taken up to 20 min with each participant. Then coded data were entered in to the computer based software

Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics i.e., frequency and percentage were used for socio-demographic information, knowledge and practice.

Association between the selected socio-demographic variables with knowledge was obtained by using chi-square 'p' value and to identify correlation by using Pearson's correlation as an inferential statistics. Data was interpreted in tables. To find out the knowledge level and practice related question were compiled with considering the score of correct answer as 1 and wrong answer as 0. The levels of knowledge were grouped as:

- Inadequate level: below 50%';
- Moderate level: 50-75%;
- Adequate level: Above 75%.

The level of practice was grouped as:

- Inadequate: Below 50%;
- Adequate: Above 50%.

Results

The major findings of this study are presented into three parts.

■ Part-I- Socio demographic information

TABLE 1 shows the majority (53.4%) of participants from age group more than 30 years and minority (46.5%) were from age group less than 30 years, majority (52.5%) were male and minority (47.5%) were female. Similarly, majority (29.7%) of participants were Chettri, whereas 12.9% of participants were Newar. Majority of participants (79.2%) were Hindus and only (20.8%) were Non-Hindus. About 48.5% of participants were from nuclear family and only 6.9% were from extended family. Majority (93.1) were literate; among them majority of participants (78.2%) had above secondary level education, only 14.9% had below secondary level education. About 42.6% were engaged in service and 57.4% were non-service holders. Majority of participants (79.2%) were from urban setting and only 20% participants from rural setting.

Table 1. Socio-demographic information of participants (n=101).

Variables	Frequency	Percentage
Age		
Below 30 Years	47	46.5
Above 30 Years	54	53.4
Sex		
Male	53	52.5
Female	48	47.5
Educational status		
Illiterate	7	6.9
Up to secondary	15	14.9
Above secondary	79	78.2
Religion		
Hindu	80	79.2
Non-Hindu	21	20.8
Ethnicity		
Brahmin	17	16.8
Chhetri	30	29.7
Newar	13	12.9
Others	41	40.6
Types of family		
Nuclear	49	48.5
Joint	45	44.6
Extended	7	6.9
Occupation		
Service	43	42.6
Non- service(Others)	58	57.4
Residence		
Urban	80	79.2
Rural	21	20

■ Part-II Participant knowledge related to prevention of MI

TABLE 2 shows that less than half percent (38.6%) participants believed that MI is curable and 7.9% of participant had no idea about MI. 34.7% of participants told that alcohol is risk factor of MI but 6.9% of participants told lack of exercise is risk factor of MI. Majority (94%) of participants believed that less fat and more fruits and vegetables should be consumed on daily basis whereas only 4% of participants believed that fatty food should be consumed on daily basis. Majority (97%) of participants believed that physical exercise is necessary and only 3% of participants had no idea about the need for physical exercise. About 41.5% believed that yoga is vital and only 18.7% of participants believed that jogging is needed. Majority (76.2%) of participant believed that exercise should be done for 30 min to 1 h whereas only 4% of participants believed that duration of exercise should be more than 2 h.

TABLE 3 shows that majority (97%) of participants do exercise for relieving stress and only 3% of participants stay happy to relieve stress. Majority (95%) of participants knew that HTN is risk factor for developing MI and only 2% of participants knew that HTN is not

Table 2. Participants knowledge on myocardial infarction (n=101).

Components	Frequency	Percentage
Myocardial infarction is		
Curable	39	38.6
Controllable	37	36.6
Recurrent	17	16.8
Don't know	8	7.9
Risk factors		
Smoking	18	17.8
Alcoholism	35	34.7
Lack of exercise	7	6.9
Fatty food	34	33.7
Balanced diet	7	6.9
Food to be taken daily basis		
Fatty food	4	4
Less fat more fruits and vegetables	95	94.1
Don't know	2	2
Physical exercise needed		
Yes	98	97
No	0	0
Don't know	3	3
Type of exercise		
Jogging	19	18.7
Yoga	42	41.5
Cycling	26	25.7
Household work	24	23.7
Duration of physical exercise		
Less than 30 min	20	19.8
30 min to 1 h	77	76.2
More than 2 h	4	4

Table 3. Knowledge on prevention of MI (n=101).

Components	Frequency	Percentage
Relieve stress by		
Stay happy	3	3
Exercise	98	97
HTN risk for MI		
Yes	96	95
No	2	2
Don't know	3	3
Necessary to check Blood pressure		
Yes	101	100
DM risk for MI		
Yes	91	90.1
No	4	4
Don't know	6	5.9
High cholesterol risk for MI		
Yes	91	90
No	5	5
Don't know	5	5
Important to check cholesterol level		
Regularly	81	80.2
Irregularly	3	3
If necessary	15	14.9
Not needed	2	2
DM heredity		
Yes	58	57.4
No	31	30.7
Don't know	12	11.9

risk factor for developing MI. All participants had knowledge that it is necessary to check blood pressure regularly. Majority (90.1%) of participants knew that DM is risk factor for developing MI. Only 4% of participant knew that DM is not risk factor for developing MI. About 80.2% of participants believed that it is important to check blood cholesterol regularly and only 2% of participant believed that it is not required to check cholesterol. Majority (57.4%) of participants told that MI is hereditary whereas only 11.9% of participant had no idea about MI being hereditary.

■ Part-III: Practice on Prevention of Myocardial Infarction

TABLE 4 shows that 25.5% of participants had practice of checking blood pressure once in a month and only 16.8% of participants had practice of checking blood pressure once in a week. Majority (54.5%) of participants had practice of checking blood sugar as and when required only 5% of participants had a practice

Table 4. Participants' practice on prevention of myocardial infarction (n=101).

Components	Frequency	Percentage
How often check blood pressure		
Once a week	17	16.8
Once a month	26	25.5
Sometimes	23	22.8
As per required	35	34.7
How often check blood sugar		
Once a week	5	5
Once a month	9	8.9
Sometimes	32	31.7
As per required	55	54.5
Duration of exercise		
Daily 10 min	57	56.4
Once a week	9	8.9
Once a month	2	2
Sometimes	33	32.7
Types of exercise		
Brisk walking	51	50.4
Yoga	32	31.6
Cycling	5	4.9
House hold work	13	12.8

to checking blood sugar once in a week. About 56.4% of participants do exercise daily for 10 min and minority (2%) of participant had practice on physical exercise for once a month and about 50.4% do brisk walking whereas 12.8% do household work and only 4.9% of participants had practice on cycling.

TABLE 5 shows that majority (47.5%) of participants never check cholesterol level, minority (11.9%) of participants check cholesterol once in a month whereas majority (67.3%) of participant had stress and 32.7% of participants had no stress. About 55.9% of participants take green leafy vegetables on their food whereas 8.9% prefer junk food in their diet, more than half percent (55.8%) of participants consume chicken and only 7.5% of participants consume buff meat. Majority (66.3%) of participants sleep for 8 h and minority (5%) of participants sleep for 10 h.

TABLE 6 shows that 62.4% participants had moderate knowledge, 20.8% of them had adequate knowledge and only 16.8% had inadequate knowledge on prevention.

TABLE 7 shows that association of knowledge with selected socio-demographic factors. It was found that education and occupation had significant association with knowledge with p value=0.02 (by using Chi square test).

TABLE 8 shows that all of participants had inadequate practice on prevention of MI.

TABLE 9 shows that on an average knowledge mean score is 64.5% with SD 13.34 whereas mean score of practice is 31.4% with standard deviation 8.43.

TABLE 10 shows that there is a significant relationship between knowledge and practice. It indicates that when knowledge increases; practice is also increased by 36.9%.

Table 5. Participants' practice on prevention of MI (n=101).

Components	Frequency	Percentage
How often check cholesterol		
Once a month	12	11.9
Once a six month	17	16.8
Once a year	24	23.8
Never	48	47.5
Do you have any stress		
Yes	33	32.7
No	68	67.3
Type of food prefer		
Fatty food	22	26.4
Junk food	12	8.9
Green leafy vegetable	75	55.9
Spicy food	25	18.6
Type of meat		
Chicken	81	55.8
Mutton	28	19.3
Fish	25	17.2
Buff	11	7.5
Duration of sleeping pattern		
8 h	67	66.3
6 h	29	28.7
10 h	5	5

Table 6. Level of participants' knowledge (n=101).

Level	Frequency	Percentage
Inadequate	17	16.8
Moderate	63	62.4
Adequate	21	20.8

Table 7. Association of knowledge with selected socio-demographic variables (n=101).

Variables	Inadequate	Moderate	Adequate	*p value
Age				
>30 Years	6	27	14	0.399
<30 Years	11	36	7	
Educational status				
Illiterate	4	3	0	0.02
Up to secondary	3	11	1	
Above secondary	10	49	20	
Occupation				
Service	2	28	13	0.02
Non-service(Others)	15	29	2	
Residence				
Urban	12	49	19	0.29
Rural	5	14	2	
*Chi-square test 'p' significant at <0.05 level				

Table 8. Level of participants' practice (n=101).

Level	Frequency	Percentage
Inadequate	101	100

Table 9. Score of knowledge and practice (n=101).

Variables	Minimum	Maximum	Mean	SD
Knowledge	31.58	89.47	64.51	13.34
Practice	16.67	55.56	31.40	8.43

Table 10. Correlation between knowledge and practice.

		Knowledge Score (%)	Practice Score (%)
Knowledge Score (%)	Pearson Correlation	1	0.369**
	Sig. (2-tailed)	0	0
Practice Score (%)	Pearson Correlation	0.369**	1
	Sig. (2-tailed)	0	-

Discussion

Demographic patterns of 101 participants at Sahid Gangalal Hospital were age, sex, ethnicity, religion, types of family, education, occupation and residence, In relation to this majority of participants were age group more than 30 years (53.4%), majority were male (52.5%), which is similar to study conducted at Ayub teaching Hospital, Pakistan, where majority of participants were male (68.7%) [5].

In this study, majority of participants (78.2%) had above secondary level education. However a study conducted in Tehran showed that female age above 28 years education level was higher in high school diploma [6].

In this study, 17.8% of participants had knowledge about risk factor of MI is smoking and knowledge and practice score in mean 64.51% and 31.4% respectively with standard deviation 13.4 and 8.43., However the study conducted at North East coast Malaysia [10,11], about 87% of women knew that smoking is risk factor and knowledge and practice score were 13.76% and 13.59% accordingly.

In this study, about 4% of participants take fatty food whereas majority of participants (94.1%) consume less fat, more fruits and vegetables and majority of participants (97%) believed that physical exercise is needed to prevent MI, In contrast to a study conducted at South Asia, 26.9% take fruit and vegetables for daily intake and only 6.1% believe in moderate or high intensity exercise is beneficial [12].

In this study, among 101 participants, about 57.4% had knowledge about non modifiable risk factors of MI followed by heredity. Regarding modifiable risk factors, most (97%) were said physical exercise and said yoga by 41.7%. Similarly, 97% participants had knowledge about exercise can relieve stress. Hypertension (95%), Diabetes (90.1%), high Cholesterol (90%) are modifiable risk factors. About 80.2% of participants had knowledge about importance of checking blood sugar which is similar to the study done at Dahikot VDC of Bhaktapur district [7]. Less than half (46.9%) knew age as non-modifiable risk factors followed by heredity (39.8%), regarding modifiable risk factors smoking (70.4%), stress (63.7%), physical inactivity(61.7%), hypertension (59%), HIGH cholesterol (36.5%), diabetes (30.1%).

In this study, 20.8% participants had adequate knowledge on prevention of MI, occupation and education status were associated with level of knowledge. However, a study conducted at Ayub Teaching Hospital Pakistan showed 28.3% of the patients were having good level of knowledge; male gender and educational status were associated with good level of knowledge [5]. Similarly, in a study at Tehran about knowledge and practice assessment of workers at pharmaceutical company, 49% of workers had good level of knowledge [9].

Regarding practice, majority of participant (56.5%) had practice on physical exercise daily for 10 min and half of participants (50.4%) do brisk walking, practice score is 31.4% in mean (SD 8.43). In contrast to study conducted on North East coast Malaysia [10], only 13% of women practiced exercise as requires and practice score was 51.1% and similar to the study done at Tehran [6], the mean score of the participant performance in preventing coronary artery disease was 4.66 out of 9.

In current study, Knowledge level was moderate among 62.4% but all of participants had inadequate practice level despite high (93.1%) literacy level among them and majority (79.2%) from urban setting.

In this study, Correlation of Knowledge and Practice showed significant relationship between them. Which indicates that when knowledge increases practice also increases by 36.9%?

Conclusion

The study findings revealed that the knowledge level was moderate among 62.4% but nearly all participants had inadequate practice level despite high literacy level (93.1%) among them and majority (79.2%) from urban setting. The mean score of knowledge was 64.51% and practice score was 31.4%. There was significant association of education and occupation with knowledge (chi-square 'p' value 0.02). Correlation of knowledge and practice showed significant relationship between them which indicates that when knowledge increases practice also increases by 36.9%. So health awareness program regarding prevention of cardiovascular problems especially MI should be lunched at national level [13,14].

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