

Knowledge about heart attack and hypertension among individuals attending a cardiac camp in Pokhara city

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Abstract

Objectives: Previous studies in other countries had shown lacunae in patients' and general publics' understanding of cardiovascular diseases. Such studies are lacking in Nepal. Hence the present study was carried out to: a) note the respondent's knowledge regarding myocardial infarction and hypertension and b) note the association, if any, of the knowledge with demographic and personal characteristics.

Materials and methods: Respondents attending a cardiac camp organized in the Manipal Teaching hospital during September 2002 were interviewed by previously briefed seventh semester students using a structured questionnaire. Basic demographic information and knowledge about myocardial infarction and hypertension was collected. The median score was calculated. Differences in scores among different subgroups of respondents were noted using appropriate statistical tests ($p < 0.05$).

Results: Sixty-six respondents were interviewed; 44 were male. The knowledge scores for heart attack and hypertension were 6 (maximum score 8) and 11 (maximum score 14) respectively. The scores were significantly lower among respondents with a monthly family income below 2000 rupees and was higher among respondents/family members suffering from cardiovascular disease.

Conclusion: The respondents were aware of the basic facts regarding myocardial infarction and hypertension. However, lacunae in knowledge were noted. Further studies are required.

Key words: Hypertension, Knowledge, Myocardial infarction, Nepal

The World Health Organization (WHO) currently attributes one-third of all global deaths (15.3 million) to cardiovascular diseases (CVD).¹ In the South-East Asia region (SEAR) CVD accounts for 29% of all deaths and 11% of disease burden.²

In Nepal, it is estimated that 5.6% of people living in the mountains, 1.5% in the hills and 5% of people in the terai region suffer from CVD.² Five to 20% of adults are reported to suffer from hypertension, with a lower prevalence in the rural areas.² The mortality from coronary artery disease (CAD) and the prevalence of CAD risk factors is rising rapidly in developing countries.³

Unbalanced diets, obesity, physical inactivity and tobacco use all contribute to CVD and addressing these factors can help to stem the epidemic.¹ Studies on recognition by the public of the major signs and symptoms of a heart attack⁴ and awareness of and misconceptions about hypertension have been carried out in developed countries.⁵

However, patients' understanding of the prevention of CVD was found to be insufficient in a previous

study.⁶ Better patient knowledge has been shown to be associated with improved adherence to lifestyle changes and medication in a Swedish study.⁷

Studies on the knowledge of the general population about heart attack and hypertension are lacking in Nepal. This knowledge may be important for both disease prevention and management. Hence the present study was carried out among individuals attending a cardiac camp in Pokhara, Western Nepal.

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The objectives of the study were to:

- 1) Collect information on the demographic and personal characteristics of the respondents
- 2) Note the knowledge of the respondents about myocardial infarction and hypertension and
- 3) Note the association, if any, of the knowledge with the demographic characteristics.

Methods

The study was carried out among individuals attending a cardiac camp organized in Manipal Teaching hospital, in September 2002. The respondents willing to participate were interviewed by previously briefed seventh semester students using a structured questionnaire.

Information was collected on the age, sex and address of the respondents. The number of family members staying with the respondent, the place of residence, the level of education of the respondent and his/her occupation was noted. Information was collected on whether the respondent or a close family member was suffering from cardiac disease and if yes, the name of the disease. The purpose of attending the cardiac camp and whether the respondent had attended a similar program previously was noted. The source of medical care and the distance from the nearest health centre and medical store in minutes of walking was looked into. The questionnaire used is shown in the Appendix.

Knowledge regarding heart attack and hypertension was noted using a set of multiple responses and yes/no type questions. The median scores were calculated for heart attack, hypertension and for both together. The median score among different subgroups of respondents were compared using Mann-Whitney U test for dichotomous variables and Kruskal-Wallis test for the others ($p < 0.05$). The respondent was asked to name his/her major sources of information about heart disease.

Results

A total of 66 respondents were willing to participate in the study and were interviewed. A total of 406

individuals had attended the cardiac camp (overall response rate 16.2%). Sixteen respondents (24.2%) were in the age group 40-50 years while 13 each (19.7%) were in the age groups 10-20 and 30-40 years respectively. Twenty-seven respondents (40.9%) had five family members staying with them. Twenty-one respondents (31.8%) were agriculturists while 11 (16.7%) were students and 14 (21.2%) were housewives.

Twelve respondents had come for treatment while 13 had come for screening. The majority had come for further information about cardiovascular diseases. The source of medical care was the primary health centre (PHC)/health post in 21 respondents (31.8%) and hospital in 24 respondents (36.4%). The majority of respondents were staying within one hour walking distance from a health centre or medical store. The demographic and personal characteristics of the respondents are detailed in Table 1.

The knowledge score for myocardial infarction was 6 ± 1 . The scores for hypertension and the total score were 11 ± 2 and 18 ± 3 respectively. The maximum possible scores for myocardial infarction and hypertension were 8 and 14 respectively. The median knowledge score for heart attack among residents of Pokhara city was significantly lower compared to others. The knowledge scores for hypertension and the total score was significantly lower among respondents with a monthly family income less than 2000 rupees. The median scores of hypertension and the total knowledge score were significantly higher among respondents with heart disease or a close family member suffering from heart disease ($p = 0.021$, $p = 0.020$). The median total score according to selected demographic and personal characteristics of respondents are shown in Table 2.

The common heart diseases noted in decreasing order of frequency among the respondents/family members were hypertension, heart failure, rheumatic heart disease and congenital heart disease. Doctors in hospital and health personnel in PHC/health posts were the commonest source of information about heart disease. Other sources were radio and magazines.

Table 1: Demographic and personal characteristics of respondents

Characteristic		Number (percentage)
Sex	Male	44 (66.7)
	Female	22 (33.3)
Place of residence	Pokhara city	15 (22.7)
	Kaski district	6 (9.1)
	Other districts	43 (65.2)
	Missing	2
Residence	Urban	25 (37.9)
	Rural	38 (57.6)
	Missing	3
Educational status	Uneducated	21 (31.8)
	Primary school	17 (25.8)
	Tenth standard	16 (24.2)
	Graduate	11 (16.7)
	Postgraduate	0
	Missing	1 (1.5)
Religion	Hindu	51 (77.3)
	Buddhist	13 (19.7)
	Missing	2
Monthly family income (Nepalese rupees)	<2000	20 (30.3)
	2000-4000	30 (45.5)
	>4000	14 (21.2)
	Missing	2
Self or family suffering from cardiac disease	Yes	49 (74.2)
	No	17 (25.8)
Purpose of attending camp	Treatment	12 (18.2)
	Information	41 (62.1)
	Screening	13 (19.7)
Attended similar camps before	Yes	15 (22.7)
	No	60 (75.8)
	Missing	1
Distance from health centre (minutes of walking)	<10	10 (15.2)
	10-30	25 (37.9)
	30-60	22 (33.3)
	>60	9 (13.6)
Distance from medical store (minutes of walking)	<10	12 (18.2)
	10-30	24 (36.4)
	30-60	24 (36.4)
	>60	6 (9.1)

Table 2: Median total knowledge score according to selected demographic characteristics of respondents

Characteristic		Score (median \pm interquartile range)	P value
Address	Pokhara city	17 \pm 7	0.073
	Kaski district	16 \pm 3	
	Other districts	18 \pm 3	
Income	<2000	16 \pm 6.5	0.046
	2000-4000	18 \pm 2	
	>4000	18 \pm 5	
Cardiac disease	Yes	18 \pm 3	0.020
	No	16 \pm 6.5	

Discussion

The number of male respondents was 44 (66.7%). In a previous study, 52.9% of respondents were male.⁸ The interviewers in our study were all male. Unwillingness of female respondents to be interviewed by male interviewers was observed in a previous study.⁹ This could have been a reason in the present study also. In our study, 54.5% of respondents stayed within 30 minutes walking distance from a health centre or medical store. The percentage was lower than that reported in previous studies.^{8,9}

Information was not obtained on whether the respondents had a nuclear or a joint family structure. Sixty respondents (90.9%) were not trained in first aid or were not aware of the principles of first aid. More training sessions on first aid should be organized. Doctors in hospital or health personnel in PHC/health posts were the major sources of information regarding CVD. Sessions informing health personnel on how to provide accurate and relevant information about CVD may be helpful. Respondents could also be made aware of other sources of information. However, we had not looked at the respondents' satisfaction with the information provided about CVD by health care providers in the present study.

In our study the median knowledge score about heart attack and hypertension were high. However, the questions asked were fairly basic and the details of pathogenesis, preventive measures and lifestyle modifications were not enquired into. No significant changes in the knowledge score according to gender of the respondents were seen. The knowledge scores were lower among respondents staying in Pokhara city. This is contrary to expectations. However, the small sample size could have led to errors while doing subgroup analysis. The scores were higher among persons suffering from or whose family members were suffering from heart disease. The respondents with self/family members suffering from CVD would have had a strong motivation to know more about these conditions.

Hypertension was the commonest CVD noted. In a study carried out at the Nepal Medical College teaching hospital (NMCTH) the prevalence of hypertension among medical admissions was 9.4%.¹⁰ In previous studies in Australia and Canada, lack of public awareness and misconceptions about hypertension and hypertensive complications was commonly noted.^{5,11} In our study, though the total score was high, 50 respondents (75.5%) were not aware of the normal values of blood pressure in an

adult, 54 respondents (81.8%) could not name an allopathic antihypertensive. In a study conducted in Brazil, 41% of patients were not able to define hypertension and only 40% said that changes in diet and lifestyle are required to control hypertension.¹² In our study, 43 patients (65.1%) answered the questions relating to the role of lifestyle modification in hypertension correctly.

The median knowledge score for heart attack was high. A study in Jordan had concluded that type of response to chest pain was good but more improvement was recommended.¹³ In our study, only 32 respondents (48.5%) were aware of the role of cholesterol in pathogenesis of heart disease. We did not investigate the knowledge of target levels of cholesterol. In an American study, knowledge of cholesterol levels and targets in patients with coronary artery disease was poor and cholesterol education efforts appeared inadequate.¹⁴ Better knowledge as already discussed improves adherence to lifestyle changes and medications.

Our study had many limitations. The response rate was low. The convenience sample may not have been representative of the population. The number of female respondents was low. Information was collected using mainly multiple responses and yes/no questions. Only the knowledge was examined and the attitude and practice were not looked into. The sample size was low.

This preliminary study showed that overall, the respondents were aware of the basic facts regarding heart attack and hypertension. However, more detailed studies in the general population are required. The results may pinpoint lacunae in patients' and lay persons' knowledge regarding CVD. The attitude and practice regarding CVD can be examined in future studies. The results will be helpful in designing awareness and educational programs about CVD for the community.

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Annex

Knowledge about myocardial infarction and hypertension

disease are:

Age:

Sex: M/F Address:

Urban/rural

Number of family members staying with respondent:

Level of education: Uneducated/Primary school/Tenth standard/Graduate/Postgraduate

Occupation:

Religion:

Monthly family income: <2000/2000-4000/>4000

Whether self or any family member staying with self is suffering from cardiovascular disease: Yes/No

If yes, then name of disease:

Purpose of attending the cardiac camp:

Have you attended any similar programmes before? Yes/No Have you been trained in first aid? Yes/no

Source of health care:

Distance from the nearest health centre in mins. of walking: <10/10-30/30-60/>60

Distance from the nearest medical store in mins. of walking: <10/10-30/30-60/>60

What is a heart attack?

The heart muscle cell gets decreased blood supply? Yes/No

There may be pain in the chest which moves down to the arm: Yes/No

There may be increased sweating: Yes/No

The patient suffering from heart attack should be taken to a doctor/health centre immediately: Yes/No

A drug called streptokinase may be helpful in heart attacks: Yes/No

Eating a fat rich diet increases the risk of heart attacks: Yes/No

Regular exercise decreases the risk of heart attacks: Yes/No

The level of a type of cholesterol may be increased in heart attacks: Yes/No

What is hypertension?

The normal level of blood pressure for a healthy adult is

If the BP increases the heart has to work harder: Yes/No

Increases in BP increases the risk of cardiovascular diseases: Yes/No

In high blood pressure the amount of salt in the food should be: Decreased/Increased/Kept the same

Going to the temple, talking with friends, doing yoga are helpful/harmful in high blood pressure.

The BP of a person increases as he/she grows older: Yes/No

BP measurement is a painful procedure: Yes/No

Do you check your BP every year? Yes/No

Can you name a modern medicine used to treat high blood pressure?

High blood pressure can present as giddiness, general unease: Yes/No

High blood pressure may sometimes cause no problems and may be detected during a checkup: Yes/No

In some cases it can present as a life threatening emergency: Yes/No

High blood pressure increases the risk of stroke: Yes/No

If I am diagnosed to be suffering from and are prescribed medicines for high blood pressure then on feeling better: I will stop the medicines abruptly/Continue till advised by the doctor

My major sources of information about cardiovascular