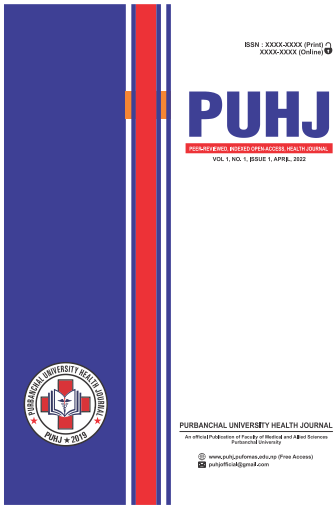

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Knowledge on Hypertension among Adult People in Morang, Nepal

Saraswati Basnet[1*]

Abstract

Introduction: Hypertension is one of the silent killers in the 21st century and is one of the largest global public health concerns. An estimated 1.28 billion people aged 79 years worldwide have hypertension, with the two-thirds residing in low and middle-income country. In Nepal, about one in every four people has hypertension, and less than 5% have it under control.

Objective: The objective of the study was to assess the knowledge on hypertension among adults in a community.

Method: A descriptive cross-sectional design was used to assess the knowledge on hypertension among adults. A convenience sampling technique was used to select the respondents. A structured interview schedule was used to collect the data among 423 respondents. Descriptive and inferential analysis i.e. chi-square test was used to find the association between dependent and independent variables.

Result: The finding of the study revealed that less than one third (27.9 %) of respondents were aged between 31 to 40 years. More than half (52.7%) were male, less than one third (28.6%) of respondents were dependent on service. Similarly, more than half (53.4%) of the respondents had no family history of hypertension less than half (42.6%) of respondents were Brahmin/ Chhetri, 44.4% of respondents had a good level of knowledge on hypertension. The finding shows that there was a significant association between level of knowledge with educational level (p=0.001), ethnicity (p=0.001), source of health information (internet) (p=0.001) and health care worker (p=0.001) whereas the other independent variables had no statistical significance with the level of knowledge ($p < 0.05$).

Conclusion: The study concluded that less than half of respondents had still poor level of knowledge. Hence, mass awareness program might be helpful to increase the level of knowledge on hypertension.

Keywords: Adult people; Community; Hypertension; Knowledge; Lifestyle

Introduction

Hypertension is one of the silent killers and is one of the biggest global public health concerns in 21st century.[1] Hypertension, and the prevalence is expected to increase to 29 % by 2025 driven largely by increases in developing countries. [2]. Hypertension is curable as well as treatable so it is needed for involvement from individual, government and private sectors, health workers, civil societies and moreover individual awareness is highly suggested. [3] It is estimated 1.13 billion people worldwide have hypertension, most (two-thirds) living in low- and middle-income countries. One in 4 men and 1 in 5 women had hypertension and also have the problem under control. Hypertension is a major cause of premature death worldwide.[4] Study reveals that the respondent's knowledge score is lower on hypertension as well as the relationship between diets.[5] The study findings of Spain shows that only 41.7% of respondents had knowledge on hypertension. Likewise, the area of major lack of knowledge of the risk of hypertension and problems caused by hypertension in the kidney. [6] Similarly knowledge on risk factors of hypertension was extremely low. Several misconceptions such as the use of agro-chemicals, fertilizers and excess vitamins were identified as causes of hypertension.[7] Likewise, in Tibet, Yao et al, claims that nearly half (49.2%) of respondents had no idea of risk factors and consequences of hypertension. [8]The study conducted in Nepal reveals that less than half of the respondents (41.3%) have inadequate level of awareness on hypertension. [9]

In Nepal the trend of hypertension was highest (41.7%) in increasing age 65 years. This prevalence was significantly higher among male participants and residents of urban areas. [10] A study finding of Nepal shows that more than half (53.3%) of respondent had poor knowledge regarding the diet. [11] Karmacharya et al. agrees that only 44% of the hypertensive participants were aware of their condition. [12] Various studies findings reveal that the levels of awareness were low so the researcher identified knowledge gap on hypertension among the people. The objective of the study was to assess the knowledge on hypertension among adults in a community.

Method

The descriptive cross-sectional study design was used in the study. The total duration of the completion for this study was six months. This study was conducted at Biratnagar Metropolitan which consists of 19 wards and total population is 242,548. [13] Among them, ward seven and eight were selected by purposive sampling technique. It is situated in Morang district in province no. 1. According to records from ward office, the estimated population of ward no. 7 and 8 were 8342 and 13880 respectively. Study population was both male and female of aged 21-80 years dwelling in a community at Biratnagar Metropolitan city. The sample size of the study was 423. Simple random technique (lottery method) was used to select the wards. Further, household were selected by convenient sampling. Only one member who first meets the researcher, was enrolled for the study. Adults of aged 21-80 years were included in the study. Structured interview schedule was developed in English language then translated to Nepali by consulting with both English and Nepali teachers. Although interview was taken by Nepali language. It had two parts, Part I consisted of socio-demographic information of community people and Part II consisted of structured questionnaires related to knowledge on hypertension. Knowledge Score was calculated using 13 structured questions (4 multiple choices, 9 multiple responses). In case of multiple responses, each correct response carries 1 mark. Overall questions carry 70 marks. The total score was then converted into percentage Poor knowledge was below mean score and good knowledge was above mean score. [15] The content validity was maintained by consultation with subject matter experts, physician. Pretesting was done on 10% of the total sample (n =43) in a similar setting. Ethical clearance was obtained from the Institutional Review Committee (IRC) of Tribhuvan University Institute of Medicine Maharajgunj, Reference no. 465(6-11) E2 - 077/078. Written permission was obtained from the ward chairman of selected areas and written informed consent was obtained from each participant before the interview. Confidentiality was maintained. At first data entry was done in MS-excel followed by using SPSS version 16.00.

Descriptive analysis was used to assess the knowledge and inferential analysis i.e. chi-square was used to find the association between dependent and selected demographic variables. p-value of <0.05 was considered to indicate statistical significance at 95% confidence level.

Table 1: Socio- Demographic Characteristic of Respondents n=423

Characteristics	Frequency (f)	Percentage (%)
Age (years)		
20 -30	53	12.5
31-40	118	27.9
41-50	103	24.3
51-60	99	23.4
>60	50	11.8
Sex		
Male	223	52.7
Female	200	47.3
Occupation		
Business	76	18
Service	121	28.6
Agriculture ,Daily wage, Foreign job	60	14.2
house work	116	27.4
0ther (carpenter, painter)	50	11.8
Education		
No education	86	20.3
Read and write	67	15.8
Primary	23	5.4
Secondary and below SLC	65	15.4
SLC & Above	135	31.9
Higher education	47	11.1
Family history of Hypertension		
Yes	197	46.6
No	226	53.4
Occurs in father/mother (n=197)		
Father	98	49.7
Mother	99	50.2
Ethnicity		
Brahmin/ Chhetri	180	42.6
Janajati	71	16.8
Madeshi	125	29.6
Muslim	29	6.9
Dalit	18	4.3
Sources of Health Information*		
Magazine	221	52.2
Internet	199	47.0
Radio/ Television	229	54.1
Health Care Worker	229	54.1

*indicates multiple responses, each response is equal to 100%.

Table 1 revealed that among 423 respondents, 27.9 % were age 31 to 40 years where as more than half (52.7%) were male respondents. Among the respondents, 28.6% of respondents were depended on service whereas 31.9% of respondent's education level was SLC and above. More than half (53.4%) of the respondents had no family history of hypertension whereas only 46.6% of respondent had family history of hypertension. Less than half (42.6%) of respondent were Brahmin/ Chhetri.

Table 2: Respondent's Knowledge on High Blood Pressure, Normal Range & Disease as Hypertension n=423

Characteristics	Frequency (f)	Percentage (%)
High blood pressure		
Greater than normal	348	82.3
lower than normal	49	11.6
Equal to normal	24	6.1
Normal blood pressure		
100/60 mmHg	70	16.5
130/90 mmHg	247	58.4
120/80 mmHg	42	9.9
I don't know	64	15.1
High blood pressure is		
Controllable or treatable	325	76.8
Recurrent	63	14.9
Incurable	20	4.7
Unidentifiable	15	3.5

Out of 423 respondents in table 2 shows that most of (82.3%) respondents had known as high blood pressure is greater than normal. More than half (58.4%) of respondent answered wrongly 130/90 as normal range of blood pressure where as 76.8% of respondents answered high blood pressure is controllable or treatable disease.

Table 3: Respondent's Knowledge on Risk Factor of Hypertension n=423

Characteristics	Frequency (f)	Percentage (%)
Risk factors of Hypertension*		
Excessive salt consumption (more than 5gm/day)	365	86.3
A diet high in saturated fat and trans fat	125	29.6
Consumption of tobacco and alcohol	316	74.7
Low intake of fruits and vegetables	85	20.1
Family history of hypertension	164	38.8
Increasing age over 65 years	91	21.5
Being overweight or obese	145	34.3
Low potassium intake	77	18.2
Stressful situation	105	24.8
Smoking	70	16.5
Co-morbidities	76	18.0
Physical Inactivity	70	16.5

*indicates multiple responses, each response is equal to 100%.

Table 3 represents that more than three fourth (86.3%) of the respondents had answered excessive salt intake (more than 5gm/ day) risk of hypertension whereas only 18.0% of respondents had answered that comorbidity is risk factor of hypertension. Likewise, nearly three forth (74.7%) of respondents answered consumption of tobacco and alcohol is a risk of hypertension.

Table 4: Knowledge on Common Features of Hypertension n=423

Characteristics	Frequency (f)	Percentage (%)
Common Features of Hypertension*		
Numbness or tingling in hands or feet	170	40.2
Early morning headaches	90	21.3
Irregular heart rhythms	237	56.0
Irregular heart beat	106	25.6
Buzzing in the ears	235	55.6
Severe Headache	237	56.0
Fainting attack	67	15.8
Asymptomatic	51	12.1
Vision changes	87	20.6
Nosebleeds	75	17.7
Dizziness	132	31.2

*indicates multiple responses, each response is equal to 100%.

Table 4 showed that 56.0% of the respondents answered irregular heart rhythms is the common features of hypertension. Similarly 55.6% of the respondents answered buzzing in the ears is the features of hypertension. Fifty six percent of the respondents answered severe headache is the symptoms of hypertension.

Table 5: Respondent's Knowledge on lifestyle modification & management of Hypertension n=423

Variables	Frequency (f)	Percentage (%)
Lifestyle Modification of Hypertension*		
Limiting the intake of foods high in fats	137	32.4
Being physically active and regular exercise	190	44.9
Reducing salt intake	271	64.1
Eliminating /reducing Trans fats (process food) in diet	143	33.8
Higher intake of fruits and vegetables	204	48.2
Avoid cold exposure	163	38.5
Weight control & Maintain	189	44.7
Stress reduction by meditation, yoga	109	25.5
Quitting cigarette, tobacco & alcohol intake	235	55.6
Management of Hypertension		
Eat of regular medicine	88	20.8
Managing other medical conditions	158	37.5
Regularly checking blood pressure	172	40.7
Treating high blood pressure	197	46.5

Indicate that multiple responses, each response equal to 100%.

Table 5 revealed that respondents answered that reducing salt intake (64.1%); quitting cigarette, tobacco & alcohol intake (55.6%); higher intake of fruits and vegetables (48.2%) are the lifestyle modification. Similarly, respondents answered that treating high blood pressure (46.5%), regularly checking blood pressure (40.7%) are managing the high blood pressure.

Table 6: Respondent's Level Knowledge on Hypertension n=423

Level Knowledge	Frequency (f)	Percentage (%)
Good Knowledge	188	44.4
Poor Knowledge	235	55.6
Mean Score ± SD = 29.9±9.8		

Table 6 illustrated that mean score± SD were 29.9±9.8 only less than half (44.4%) of respondents had good level of knowledge. More than half (55.6%) of respondents had poor level of knowledge.

Table 7: Association between Level of Knowledge and Selected demographic variable n=423

Variables	Level of Knowledge		p-Value
	Good Knowledge	Poor Knowledge	
Age (years)			
20-40	106	168	<0.001 **
>40	82	67	
Ethnicity			
Brahmin / Chhetri	104	76	<0.001 **
Other & Dalit Madheshi)	84	159	
Education level			
No education	12	74	
below SLC	64	91	<0.001 **
Above SLC & higher education	112	70	
Family History			
Yes	100	97	0.015 **
No	88	138	
Source of Health information			
Internet			
Yes	111	88	<0.001 **
No	77	147	
Health Care Worker			
Yes	115	103	0.001 **
No	73	132	

** indicate association, χ^2 is Chi-square.

Likewise, table 7 shows that there was a significant association between level of knowledge with educational level (p=<0.001), ethnicity (p=<0.001), received health information by internet (p=0.001) and health care worker (p=0.001) whereas the other independent variables had no statistical significance with the level of knowledge (p > 0.05).

Discussion

This study finding revealed that less than one third (25.7%) of respondents were age 60 and above years, more than half (52.7%) were male and less than half (42.6%) of respondents belong

to Brahmin/ Chhetri ethnic group which contradicts with the findings where nearly half (47.8%) were in the age group of 60 years and above, more than half, (58%) were male, less than half (41.7%) were Brahmin/ Chettri. [14] This may be because of the differences in setting and socio-demographical variable of the respondent. Present study findings revealed that most of (82.3%) respondents had known as high blood pressure is greater than normal. A study conducted in Tibet by Yao et al found that less than one third of the respondents knew the normal range of blood pressure. [8] Nearly half (49.2%) of respondents had no idea of risk factors and consequences of hypertension and about 30% of the respondents did not know lifestyle changes as the preventive measures for hypertension. Nearly one fourth (24.8%) of the respondents knew that stressful situations is the risk factor of hypertension where Pokhrel et al concluded 96.4% of respondents identified stress as a risk for hypertension.[9] Furthermore, less than two third (64.1%) of the respondents had known reducing salt intake (less than 5gm/day); less than half (48.2%) of respondents had opinion of higher intake of fruits and vegetables leads to reducing the chance of hypertension which is supported with the findings where reducing the sodium intake from the high to the intermediate level reduced the systolic blood pressure by 2.1 mm Hg ($p<0.001$) during the control diet and by 1.3 mm Hg ($p=0.03$). [16]

In addition, the respondents answered intake of high saturated fat (29.6%); consumption of tobacco and alcohol (74.7%); family history of hypertension (38.8%); stressful situation (24.8%); and inactivity (16.5%) are the risk factors of hypertension. Common features of hypertension identified were severe headache (56.0%) and vision change (17.7%) with the similar finding by Wang et al.[17] Likewise, the respondents answered that higher intake of fruits and vegetables (48.2%); unsalted nuts and seeds (24.6%); consume skim milk (78.0%) is the beneficial food for hypertension. A study conducted in Nepal shows contradict finding where only 46.7% had good knowledge and 53.3% had poor knowledge regarding the diet.[18] This may be the setting and socio-cultural factors of the respondents. Present study result showed that less than half (44.4%) of respondents had good level of knowledge on hypertension which contradicts with the study conducted in Ethiopia by Worku Kassahun et al., where more than half (56%) of respondents had good knowledge.[19] Similar finding illustrated that 58.7% of adults had adequate awareness regarding hypertension. [9] The present finding also revealed that there was a significant association between level of knowledge and educational level ($p=0.000$), ethnicity ($p=0.000$), received health information by internet ($p=0.001$) and health care worker ($p=0.001$), but another study conducted in Nepal, contradict with the findings where there was significant association between level of awareness with age ($p=0.042$), religion (0.035), occupation (0.011), educational status (0.036), economic status, family history (0.007) and diagnosis of hypertension (0.020). [9] The study conducted in Western Nepal revealed that in rural Nepal, socioeconomic status was associated to higher rates of hypertension. [20]

To include all ethnic group on equal proportion and to find out its associated factors were the limitations of the study.

Conclusion

The finding of study concluded that less than half of respondents had good level of knowledge on hypertension. Similarly, the finding also highlighted that there was a significant association between level of knowledge with age, educational level, and ethnicity, received health information by internet and health care worker. However, the finding highlight that still more than half of the people has poor level of knowledge. Hence, mass awareness program strategies might be helpful to enhance their knowledge on hypertension.

Recommendation

It would be better if the intervention study with awareness program could be conducted in diverse setting and conduct comparative study among general population.

Conflict of Interest

The author declares no conflict of interest.

Financial Declaration

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