

Research Article

Knowledge, Attitude and Practice about Hypertension among adult Population of Letang Municipality, Morang District, Eastern Nepal

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DOI: 10.5281/zenodo.7835009

[Received: - 10-03-2023, Accepted:-19-04-2023 Published 22-04-2023]

Abstract

Introduction: Hypertension has been identified as one of the major public health and medical challenges with 1/4 adults worldwide estimated to have high blood pressure (BP). **Objectives:** To assess knowledge, attitude and practices regarding hypertension and to measure the association between socio-demographic characteristics with knowledge, attitude and practice regarding hypertension among adult population. **Methods:** The cross-sectional study was conducted among the 335 adult populations in Letang Municipality of Nepal. Semi-structured questionnaire was used for data collection. Chi-square test was applied to measure the association between socio-demographic characteristics with knowledge, attitude and practice regarding hypertension. **Results:** Majority of the respondents (67.2) have knowledge about the meaning of hypertension and symptoms of hypertension (52.2%). Most of the respondents think that regular physical activity (83.9%) and reduce salt intake (84.2%) can be prevent hypertension. Almost 73.4% of respondents didn't know their blood pressure and never checked their BP regularly (66.6%). Almost 12.8% of the study population suffering from hypertension. The adult Population with age group of 41-60 years (62.6%) was seen significantly good knowledge in comparison to other age groups. The study population having educational level SLC and above was seen significantly good knowledge, attitude and practice regarding prevention of hypertension in comparison to below SLC and illiterate. The study population belong to above

poverty line had significantly good knowledge, attitude and practice regarding prevention of hypertension in comparison to below poverty line. Conclusions: We conclude that majority of the study population of Letang Municipality had higher knowledge and positive attitude toward prevention of hypertension but the level of practices was poor.

Keywords: Knowledge, Attitude, Practice, Hypertension, Adult Population, Letang Municipality, Nepal

Introduction

Hypertension (HTN) is an important public health problem in both in developed and developing countries. The global data suggests that 7.6 million premature deaths (about 13.5% of the worldwide total) were attributed to high blood pressure. Approximately, 55% of stroke and 47% of ischemic heart disease globally were due to hypertension. Hypertension has been associated with increased risk of coronary artery disease and is a major risk factor for cerebrovascular and cardiovascular diseases.¹ Hypertension is a silent killer because in most situations it remains asymptomatic and only discovered after a complication develops in susceptible organs causing health problems, like atherosclerotic heart disease, cerebrovascular insufficiency and renal failure.² On the other hand, common risk factors of hypertension are aging, hereditary, obesity, weight gain, high sodium intake, low calcium and potassium intake, alcohol consumption, psychological stress and low physical activity.³

The prevalence of HTN in the various parts of the country (Nepal) was as follows: 5.3% in Mountains (Jumla), 6% in rural Kathmandu (Bhadrapas and Alapot), 8.1% in Terai plains (Parsauni), and 9.9% in urban Kathmandu.⁴ Studies done in different geographical settings indicate towards a high prevalence of HTN in the Nepalese population. For example, a BP study in Dharan town of Eastern Nepal in 2005 found a prevalence of almost 23%.⁵

Adequate information about the awareness of hypertension is essential for prevention and control of hypertension. Community level data for hypertension and its risk factors is scarce in rural Nepal. Therefore this study aimed to

assess knowledge, attitude and practices regarding hypertension and to measure the association between socio-demographic characteristics with knowledge, attitude and practice regarding hypertension among adult population.

Methodology

A Community based cross-sectional study was conducted from 9th December – 22nd December, 2018 in Letang Municipality of Morang District of Nepal. Letang is located in the eastern geographical region of Nepal formed by merging existing Village Development Committees Letang, jante, warrangi and Bhogateni. It is located 46 km north east of Biratnagar Sub metropolitan. At the time of the 2011 Nepal census, it had a population of 18,552 people living in 4,359 individual households. The main ethnic groups here are Limbu, Brahmin, Chhetri, Magar, Rai, Tamang etc.

This was a two weeks study to fulfill the Epidemiological Management carried out by students of MBBS 3rd year, Batch 2016 of B. P. Koirala Institute of Health Sciences, Dharan, Nepal. There were 14 medical students who helped for this study for two weeks. This research was based on random selection of the study area Letang Municipality. This study considered 24% of the adult people (Sadeq Ret al in Baghdad, Iraq, 2017)⁶ recorded good practice. For sample size estimation, it was calculated as 304 by using the formula, sample size $(n) = z^2pq/L^2[1.96^2 \times 24 \times 76/4.8^2 = 7007.07/23.04] = 304$ as sample based on the prevalence of 24%, 95% confidence level and 20% allowable error. Now adding

10% in calculated sample size (10% X 304=30.4) to reduce various bias then, final sample size= 304+30.4 =334.4. Therefore, the required sample size is 335. The data was collected from 335households among adult Population aged 18 years and above in Letang Municipality of Morang District, Eastern Nepal.

Multi-stage random sampling method was applied for data collection. There are 9 wards in Letang Municipality. Among 9 wards, 5 wards (ward number 4, 5, 6, 7 and 8)were selected randomly using lottery method. The list of households of five selected wards was prepared and equal number of households (67) was selected from five wards on the basis of simple random sampling by lottery method. Only one respondent was selected from a household. Each subject was selected till the sample size was fulfilled from the selected five wards of Letang Municipality.

The ethical approval was taken from the Institutional Review Committee (IRC) of B. P. Koirala Institute of Health Sciences, Dharan, Nepal. Written permission was taken from concerned authority and each participants of the study.

Aged ≥ 18 years of both gender, who were willing to participate in the study, those who

gave written consent and those individuals who were available after three visits were included in the study. Three visits means the selected study subjects who were not present at the time of the first visit to the respective place, they were followed for three attempts so as to include in the study and in the case of unavailability next study subject was taken. Acutely ill patients were excluded from this study.

Semi-structured questionnaire and an observational checklist were used for data collection and face to face interview was taken. The confidentiality and privacy of the study was maintained; name of the individuals or participating group was not disclose after the study.

All interviewed questionnaires were indexed and kept on file. The collected data was entered in Microsoft Excel and converted into SPSS (Statistical Package for Social Science) software package 17.0 version for statistical analysis. Data was analyzed to find out percentage and proportion. Chi-square test was applied to measure the association between socio-demographic characteristics with knowledge, attitude and practice regarding hypertension among adult population of Letang Municipality.

Results

Table 1: Sociodemographic characteristics of the study population (N=335)

Characteristics	Frequency	Percentage
Sex	Male	125
	Female	210
Age	18-40yrs	140
	41-60yrs	131
	>60yrs	64
Religion	Hindu	279
	Muslim	5
	Buddhist	40
	Cristian	11
Ethnicity	Brahmin/Chhetry	141
	Kirati	18
	Janjati	141
	Dalit	29
	Terai Cast	6

Education	Illiterate	116	34.6
	Below SLC	119	35.5
	SLC and above	100	29.9
Occupation	Student	13	3.9
	Farmer	133	39.7
	Businessman	46	13.7
	Worker	29	8.7
	Homemaker	114	34.0
Economic status	Below poverty line	188	56.1
	Above Poverty line	147	43.9
Total		335	100.0

SLC: School Leaving Certificate

Table 1 shows that majority of the study population were female by gender and Hindu by religion. Most of the study populations were below SLC followed by illiterate, and SLC and above SLC respectively. More than half of them were below poverty line.

Table 2: Knowledge about hypertension (N=335)

Characteristics	Frequency	Percentage	
Know what is HTN	Yes	225	67.2
	No	110	32.8
Know the risk factors of HTN	Yes	161	48.1
	No	174	51.9
*If know risk factors, then what (n=161)			
Smoking	98	60.9	
Alcohol	105	65.2	
Taking more salt	133	82.6	
Obesity	99	61.5	
Lack of exercise	82	50.9	
Familial	56	34.8	
Diabetes Mellitus	18	11.2	
Post-menstrual	5	3.1	
Others (Chewing tobacco, aging, stress, depression)	8	4.9	
Know the symptoms of HTN	Yes	175	52.2
	No	160	47.8
*If know symptoms, then what (n=175)			
Headache	162	92.6	
Blurring of vision	106	60.6	
Chest pain	71	40.6	
Oliguria	19	10.9	
Others (Dizziness, vertigo, tinnitus, fainting)	63	36.0	
Know the complications of HTN	Yes	97	29.0
	No	238	71.0
Total		335	100.0

*Multiple responses

Table 2 shows that majority of the respondents have knowledge about the meaning of hypertension and symptoms of hypertension. Majority of the respondents knew that taking more salt, alcohol consumption and smoking are the cause of hypertension.

Table 3: Attitude about hypertension

Characteristics	Frequency	Percentage	
Do you think HTN can be treated	Yes	265	79.1
	No	70	20.9
Regular check-up of BP is important	Yes	288	86.0
	No	47	14.0
Antihypertensive drugs should be use all over the life	Yes	251	74.9
	No	84	25.1
HTN is controllable and dangerous disease	Yes	294	87.8
	No	41	12.2
Regular physical activity to prevent hypertension	Yes	281	83.9
	No	54	16.1
Should be reduce salt intake to prevent HTN	Yes	282	84.2
	No	53	15.8
Total	335	100.0	

Table 3 shows that majority of the respondents have good attitude regarding prevention of hypertension. Majority of the respondents think that regular physical activity and reduce salt intake can be prevent hypertension.

Table 4: Practice about hypertension

Characteristics	Frequency	Percentages	
Know your blood pressure	Yes	89	26.6
	No	246	73.4
Measure BP regularly	Yes	112	33.4
	No	223	66.6
Suffering from HTN	Yes	43	12.8
	No	292	87.2
If yes then medication (n=43)	Yes	30	69.8
	No	13	30.2
Any family member have HTN	Yes	84	25.1
	No	224	66.9
	Don't know	27	8.1
Check your body weight regularly	Yes	105	31.3
	No	230	68.7
You have DM	Yes	30	9.0
	No	305	91.0
Regular physical activity	Yes	224	66.9
	No	111	33.1

Avoid taking extra salt	Yes	193	57.6
	No	142	42.4
Smoking	Yes	25	7.5
	No	310	92.5
Drink alcohol	Yes	31	9.3
	No	304	90.7
Avoid fatty food consumption	Yes	192	57.3
	No	143	42.7
Total		335	100.0

Table 4 shows that majority of the respondents didn't know their blood pressure and never checked their BP regularly. Almost 12.8% of the study population suffering from hypertension. Most of the respondents frequently performed physical exercise, avoided taking extra salt, never smoked and never consumed alcohol to prevent hypertension.

Table 5: Association between sociodemographic characteristics and knowledge regarding hypertension

Characteristics	Knowledge		Total	P-Value	
	Goodknowledge	Poorknowledge			
Sex	Male	66 (52.8)	59 (47.2)	125	0.727
	Female	115 (54.8)	95 (45.2)		
Age	18-40 years	75 (53.6)	65 (46.4)	140	0.004
	41-60 years	82 (62.6)	49 (37.4)	131	
	>60 years	24 (37.5)	40 (62.5)	64	
Religion	Hindu	135 (48.4)	144 (51.6)	279	<0.001
	Muslim	5 (100.0)	0(0.0)	5	
	Buddhist	32 (80.0)	8 (20.0)	40	
	Christian	9 (81.8)	2 (18.2)	11	
Ethnicity	Brahmin/Chhetri	78 (55.3)	63 (44.7)	141	0.249
	Kirati	13 (72.2)	5 (27.8)	18	
	Janajati	76 (53.9)	65 (46.1)	141	
	Dalit	12 (41.4)	17 (58.6)	29	
	Terai Caste	2 (33.3)	4 (66.7)	6	
Education	Illiterate	43 (37.1)	73 (62.9)	116	<0.001
	Below SLC	74 (62.2)	45 (37.8)	119	
	SLC and Above	64 (64.0)	36 (36.0)	100	
Occupation	Student	8 (61.5)	5 (38.5)	13	0.965
	Farmer	70 (52.6)	63 (47.4)	133	
	Business	26 (56.5)	20 (43.5)	46	
	Worker	15 (51.7)	14 (48.3)	29	
	Homemaker	62 (54.4)	52 (45.6)	114	
Economic Status	Below Poverty Line	83 (44.1)	105 (55.9)	188	<0.001
	Above Poverty Line	98 (66.7)	49 (33.3)	147	
Total		181 (54.0)	154 (46.0)	335	

SLC: School Leaving Certificate

The table 5 shows that the study population had studied SLC and above had significantly good knowledge regarding hypertension as compared to those below SLC and illiterates. The study population belong to the age group between 41-60 years are shown to have significantly good knowledge in comparison to other age groups. The study population belong to above poverty line had significantly good knowledge in comparison to below poverty line.

Table 6: Association between sociodemographic characteristics and attitude regarding hypertension

Characteristics	Attitude		Total	P-Value
	Good attitude	Poor attitude		
Sex				
Male	114 (91.2)	11 (8.8)	125	0.312
Female	184 (87.6)	26 (12.4)	210	
Age				
18-40 years	124 (88.6)	16 (11.4)	140	0.313
41-60 years	120 (91.6)	11 (8.4)	131	
>60 years	54 (84.4)	10 (15.6)	64	
Religion				
Hindu	247 (88.5)	32 (11.5)	279	0.859
Muslim	5 (100.0)	0 (0.0)	5	
Buddhist	36 (90.0)	4 (10.0)	40	
Christian	10 (90.9)	1 (9.1)	11	
Ethnicity				
Brahmin/Chhetri	129 (91.5)	12 (8.5)	141	0.423
Kirati	16 (88.9)	2 (11.1)	18	
Janajati	125 (88.7)	16 (11.3)	141	
Dalit	23 (79.3)	6 (20.7)	29	
Terai Caste	5 (83.3)	1 (16.7)	6	
Education				
Illiterate	96 (82.8)	20 (17.2)	116	0.008
Below SLC	106 (89.1)	13 (10.9)	119	
SLC and Above	96 (96.0)	4 (4.0)	100	
Occupation				
Student	12 (92.3)	1 (7.7)	13	0.233
Farmer	117 (88.0)	16 (12.0)	133	
Business	37 (80.4)	9 (19.6)	46	
Worker	26 (89.7)	3 (10.3)	29	
Homemaker	106 (93.0)	8 (7.0)	114	
Economic Status				
Below Poverty Line	160 (85.1)	28 (14.9)	188	0.011
Above Poverty Line	138 (93.9)	9 (6.1)	147	
Total	298 (89.0)	37 (11.0)	335	

SLC: School Leaving Certificate

The table 6 shows the study population had education SLC and above had seen significantly good attitude regarding prevention of hypertension in comparison to those below SLC and illiterates. The

study population had above poverty line had seen significantly good attitude regarding prevention of hypertension as compared to those below poverty line.

Table 7 Association between sociodemographic characteristics and practice regarding hypertension

Characteristics	Practice		Total	P-Value
	Good practice	Poor practice		
Sex	Male	42(33.6)	83(66.4)	0.33
	Female	60(28.6)	150(71.4)	
Age	18-40 years	44(31.4)	96(68.6)	0.128
	41-60 years	45(34.4)	86(65.6)	
	>60 years	13(20.3)	51(79.7)	
Religion	Hindu	76(27.2)	203(72.8)	0.027
	Muslim	3(60.0)	2(40.0)	
	Buddhist	17(42.5)	23(57.5)	
	Christian	6(54.5)	5(45.5)	
Ethnicity	Brahmin/Chhetri	43(30.5)	98(69.5)	0.053
	Kirati	11(61.1)	7(38.9)	
	Janajati	40(28.4)	101(71.6)	
	Dalit	7(24.1)	22(75.9)	
	Terai Caste	1(16.7)	5(83.3)	
Education	Illiterate	16(13.8)	100(86.2)	<0.001
	Below SLC	46(38.7)	73(61.3)	
	SLC and Above	40(40.0)	60(60.0)	
Occupation	Student	2(15.4)	11(84.6)	0.615
	Farmer	40(30.1)	93(69.9)	
	Business	17(37.0)	29(63.0)	
	Worker	10(34.5)	19(65.5)	
	Homemaker	33(28.)	81(71.1)	
Economic Status	Below Poverty Line	44(23.4)	144(76.6)	0.002
	Above Poverty Line	58(39.5)	89(60.5)	
Total		102 (30.4)	233 (69.6)	335

SLC: School Leaving Certificate

The table 7 shows the study population had education up to SLC had better practice regarding prevention of hypertension in comparison to those below SLC and illiterates. The study population had above poverty line was seen significantly better practice regarding prevention of hypertension as compared to those below poverty line.

Discussion

Hypertension (HTN) is a public health problem especially in the developing countries that are in a state of epidemiological transition from communicable to chronic non communicable diseases.⁷ Although it is a preventable and treatable disease, yet, without treatment it can lead to serious and life threatening complications.⁸ Management of Hypertension

(HTN) is a difficult task especially in developing countries like Nepal. The major problem is the lack of knowledge and attitudes about the risk factors of HTN.⁹ There is no doubt that knowledge and attitudes of patients have an impact on the management of their illness, as they can influence compliance, hypertension control, morbidity and mortality of the patients.¹⁰

The present study showed that majority of the participants had good knowledge (54%) about hypertension. A study conducted by Osman HM et al in Africa regarding the knowledge in the study, knowledge of respondents regarding hypertension was found to be higher (62.97%) than our study.¹¹The findings of our study indicates that the knowledge towards hypertension of the respondents is considerably lower than that on studies done in UAE and Nepal, (95%, 88.8%) respectively and higher than that of Nigeria (25%). In the meantime, the possible explanation for this discrepancy may be due to the difference in study setting.¹² The present study showed that 67.2% of the participants had knowledge about definition of hypertension. A study conducted by Osman HM et al in Africa assessed knowledge of hypertension in different aspects like definition, symptoms, complication. Moreover, the knowledge about definition of hypertension in study done in Africa was found to be 67.4%.¹¹ However, one study done in Ethiopia reported that knowledge about the hypertension was 84%.¹² On the other hand, the present study showed that 52.2% of participants are aware of the symptoms of hypertension which is higher than another study conducted in Nepal (48%) and lower than UAE (80%) respectively.¹³The present study shows that the knowledge about complication of hypertension was only 29%.Moreover, the study conducted in Africa showed that the knowledge about complication of hypertension was 47.4%¹¹and another study done in Nepal (62%)¹³while a study done in UAE showed 70%¹³, Ethiopia showed 73.1%¹²which is quite higher. In current study most of the respondents had reduced salt intake (57.6%) for the prevention of hypertension. Also, previous study done in Ethiopia regarding nutritional therapy of hypertension about reduced salt intake was found to be 55.5%¹²and the study done in Africa showed 61.7% of the respondents had reduced salt intake.¹¹

The present study shows that almost 12.8% of the study population suffering from hypertension which is lower than the study conducted by Vaidya A et al in rural Kathmandu where the prevalence of HTN was found to be 33.8%.¹⁴Present study shows that almost 69.8% of the surveyed hypertensive patients reported full adherence to their medications prescribed by their doctors. The interesting finding in the study conducted by Sadeq R et al in Baghdad, Iraq was that less than a quarter of the surveyed hypertensive patients reported full adherence to their medications prescribed by their doctors.⁶ This is in contrast to what was reported in USA^{15,16} (97% and 90%), and China¹⁷(88.9%).Most of the participants (77%) think that medicine alone is the management of the HTN.¹⁸The study conducted by Kawasaki T et al in Nepal showed that the treatment rates of the 2006 study are comparable to another suburban Kathmandu study in 2005 (23.5% vs 26%).¹⁹ This study showed that almost 25.1% of the participations had family history of hypertension. The positive family history of hypertension also showed a significant relation with knowledge. The suffering of another member in the family usually urges the other members to learn more about the disease through taking care of their patient, and as a reflect to their fear from catching the disease in the future.⁶ Regarding the practice; most of the patients showed fair level of practice and commitment to treatment and other measures, but this was not the case among the patients who had positive family history of hypertension, this might be due to that patients who have hypertensive family members may get exhausted with time, and frustrated from the long course treatment and care, and so, show less compliance.⁶ The key finding of the present study showed that majority of the participants had good knowledge (54%) and good attitude (89%) about hypertension. A study conducted by Sadeq R et al in Baghdad, Iraq showed that majority of the participants had good

knowledge (60.1%) and good attitude (81.9%) about hypertension.⁶ This is comparable to a study conducted in Tanzania showed that 66.8% of the respondents had good knowledge about hypertension.²⁰ A KAP study in India revealed that most of the respondents had good knowledge but poor attitude and practice toward the diseases.¹⁰ However, a number of studies showed that many participants lack of appropriate knowledge about hypertension.^{21,22} In respect with the attitude, more than 80% of the respondents showed good attitude.⁶ This finding agrees with other studies that revealed a high percentage (60-90%) of hypertensive patients who reported good attitude.^{23,24} The present study showed that only 30.4% of the participants had good practices about prevention of hypertension. Another study in Ludhiana, India also showed that the overall practices were not up to the mark.²⁵ The female was found good knowledge (54.8%) regarding hypertension in comparison to male (52.8%) but the difference was not significant. But the study conducted by Sadeq R et al in Baghdad, Iraq showed that males showed better knowledge than females.⁶ The present study shows that the study population had studied SLC and above (64%) had significantly good knowledge regarding hypertension as compared to those below SLC (62.2%) and illiterates (37.1%). The score of knowledge also showed a direct relation with the level of education, this was expected as higher education increases the awareness of the people regarding health issues, especially when it is related to their chronic illnesses.⁶ Generally the results revealed that the surveyed hypertensive patients have good knowledge and attitude about the disease but relatively poor practice.⁶ This might give an impression that the health education programs performed by the health authorities are insufficient and not fully successful. It might also be attributed to some reasons related to the patients themselves. Poor compliance to the treatment could be due to the high cost of drugs, adverse drug reactions, religious and cultural believes,

and inadequate access to medical facilities and care. These reasons were comparable to a study conducted by the Busari et al.²⁶

The major limitation of this study was the small size of the studied population and confined in a defined geographical area. The selection of a single region within the Letang Municipality in which conduct this study may limit the generalizability of these findings to populations with limited access to care and to other physicians. The studies regarding awareness and prevalence of hypertension are mostly cross-sectional and conducted in the urban areas only. There is a need for more longitudinal studies about hypertension both in urban and rural areas. There is no standardized instrument available to assess HTN knowledge and attitudes. We utilized the existing literature and medical students in the field of HTN to design a data collection instrument that would be comprehensive and detailed.

Conclusion

The study concludes that majority of the study population of Letang Municipality had higher knowledge and positive attitude toward prevention of hypertension but the level of practices was poor. The study population belong to the age group between 41-60 years are shown to have significantly good knowledge in comparison to other age groups. The study population with educational level SLC and above, and economic status as above poverty line was seen significantly good knowledge, attitude and practice regarding prevention of hypertension.

Acknowledgement

Our gratitude and sincere thanks to participants of Letang Municipality without their support study was not possible and the person who helped us in every way during study period. We would like to thank to MBBS (2016 Batch) students who helped us during study period.

Conflict of Interest: No conflict of interest

Funding: None

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