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Original Research Article

Knowledge and attitude towards hypertension among female community health volunteers of Bharatpur Metropolitan: a cross-sectional study in Nepal

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ABSTRACT

Background: Hypertension is one of the major non-communicable diseases (NCDs) and becoming a serious public health problem globally. The rising burden of hypertension in Nepal requires a community-based intervention that can be provided through female community healthcare volunteers (FCHVs). Our study aimed to assess knowledge and attitudes towards the prevention of hypertension among FCHVs of Bharatpur Metropolitan (BM).
Methods: A community-based cross-sectional study was conducted and face-to-face interview was employed to recruit all the participants (n=207). Frequencies and percentages were used to describe the characteristics of the participants. An Independent t-test was used to determine the association between knowledge and attitude of hypertension with participants' socio-demographical characteristics. All the tests were carried out at the statistically significant of p value <0.05.
Results: The majority of participants (40.6%) belonged to the age group 40 to 49 years. Education (7.7±1.5, p=0.001), religion (7.5±1.7, p=0.017,) and family history of hypertension (7.8±1.7, p=0.018) were statistically significant with the knowledge of hypertension. Similarly, education (9.6±0.9, p=0.000), and self-history of hypertension (9.5±0.7, p=0.014) of participants were statistically significant with the attitude of hypertension.
Conclusions: Despite having satisfactory knowledge and attitude on hypertension, some of the participants were unable to identify a systolic and diastolic range of blood pressure for hypertension, risk factors, and complications of hypertension. This study highlighted strengthening targeted orientation programs toward hypertension for the FCHVs to improve their knowledge and beliefs about hypertension.

Keywords: Hypertension, Knowledge, Attitude, Female community health volunteer, Nepal

INTRODUCTION

Non-communicable diseases (NCDs) have been challenging to the health systems globally in terms of resources, demographics, and management.[1] Hypertension is one of the major NCDs that is a serious public health problem that significantly increases the risk of developing heart, brain, and kidney failure.[2] Hypertension is the leading modifiable risk factor for cardiovascular disease and premature cause of death worldwide.[3]

It is estimated that 1.28 billion people have hypertension globally.[4] While almost half (46%) of the adults are still unaware that they have hypertensive conditions, however, only 42% of them are diagnosed and treated on time.[4] It has been recorded that the highest prevalence of hypertension was in World Health Organization's (WHO) African region (27%) and the lowest in America region (18%).[5] Due to the rising burden of hypertension, it threatens the health systems to achieve global target of sustainable development goal-3 (SDG-3) in reducing premature death by one-third by 2030.[6]

Low- and middle-income countries (LMICs) including Nepal are facing the challenges towards controlling and managing the hypertension.[7] It is due to increasing burden, unhealthy lifestyles, social and cultural variation, sedentary behavior and weak health system.[8] Hypertension with cardiovascular diseases (CVDs) is one of the leading cause of deaths in Nepal, accounting 26.9% of total deaths and 12.8% of total disability adjusted life years (DALYs) in 2017.[9]

FCHVs program is one of the successful program of the Government of Nepal (GoN) initiated in 1988.[10] FCHVs are grass root level and frontline community health volunteers of Nepal who do not have formal professional.[11] These volunteers should have at least primary level education and local people of the community who desired to volunteer 5 years at least. Newly selected FCHVs were provided with basic training of 10 days while 4 days refresher training to old FCHVs.[12] FCHVs play a major role to advocate healthy behavior among mothers and community people to promote immunization, safe motherhood, child health, family planning, and HIV prevention and control programs in Nepal.[13]

National Health Policy 2019 of Nepal clearly mentioned the roles and importance of FCHVs in achieving (SDG-3).[14] FCHVs role in health promotion is being increasingly recognized, and they can help to control and reduce the prevalence of hypertension by influencing the community to adopt healthy lifestyles.[15] The alarming increased in prevalence and relatively low progress in awareness, control and prevention of hypertension is becoming major concern in Nepal. There is a need for community-based hypertension preventive approaches which can be delivered through FCHVs. To the best of our knowledge, there are limited studies conducted in Nepal to provide evidence on knowledge and attitude of hypertension among FCHVs of Nepal. Thus, this study aimed to assess the knowledge and attitudes among FCHVs for the prevention and control of hypertension.

METHODS

Study design and setting

A community based cross-sectional study was performed during the month of 08-30 December 2021. Bharatpur metropolitan is one of the six metropolitans of Nepal. It is located at the center of Chitwan district and consist of 29 wards in the metropolitan. The metropolitan city covers 432.95 km^2 area and consist population of 369,268 per the 2021 census.

Study population and sampling

The study population were FCHVs of Bharatpur Metropolitan. The information and details regarding all the participants were obtained from the Annual Health Report of Public Health Promotion Section of BM.[16] During the period of data collection, none of the FCHVs were pregnant, physically and mentally disabled. So, all FCHVs (N=207) were recruited for this study. FCHVs belonging to BM were only eligible for this study.

Study tool and measures

A structured questionnaire was developed from the available information of previous studies.[2,17]

The tool was pretested among the 10% of the sample size (n=21) in another municipality that is neared to BM and obtained Cronbach coefficient of 0.76.

The questionnaire was divided into three sections including socio-demographical characteristics, knowledge regarding hypertension, and attitude regarding hypertension. The first section consisted of social and demographical characteristics of the participants. It includes age (in completed years), education (illiterate, literate, basic, secondary and university), ethnicity (Brahmin/ Chhetri, Janajati, Dalit, Madhesi and others)), religion (Hindu, Buddhist, Christian, Muslim and others), duration of working experience as a FCHV, FCHVs' history of hypertension and family history of hypertension.

The second section referred to the question related to the knowledge on hypertension. It included knowledge in defining hypertension, lifestyle choices, and behavior that may influence hypertension, and long-term effects/complications of hypertension. All the knowledge items were measured in yes/no. The third section referred to the question related to attitudes towards hypertension. It included preventive strategies like cessation of smoking, reduction in alcohol consumption, low intake of salt, low intake of oil and regular monitoring of blood pressure that reduces the risk of hypertension. All the attitude items were measured in yes/no.

Evaluation of knowledge and attitude was performed by assigning score '1' and score '0' for positive and negative response respectively. This study indicated higher the mean score, more positive knowledge and attitude respectively.

Data management and analysis

Collected data were entered, compiled, coded, and cross-verified in the Epi-data version 4.6 software. Then

statistical package for the social sciences (SPSS) version 22 (IBM) software was used for analysis. Frequencies and percentages were calculated to describe the individual characteristics of the participants. Independent t-test was performed to determine the association between individual characteristics with knowledge and attitudes towards hypertension. All the tests were conducted at a significance level of 95% confidence interval (CI).

RESULTS

Socio-demographic characteristics of the participants

A total of 207 participants were included in this study. Among them, majority of the participants (40.6%) belonged to the age group of 40 to 49 years. Around two-thirds of the participants (63.8%) were Brahamin/Chhetri while 87% were Hindu in religion. More than half of participants (55.3%) had secondary education level. Similarly, around 67% had a working experience more than 10 years as FCHV. One-fourths (25%) had history of hypertension in their lifetime while around 40% had history of hypertension in their family in this study (Table 1).

Table 1: Individual characteristics of the study participants.

Characteristics	Numbers n (%)
Age (years)	
20-29	10 (4.8)
30-39	53 (25.7)
40-49	84 (40.6)
50 and above	60 (28.9)
Ethnicity	
Brahmin/Chhetri	132 (63.8)
Janajati	68 (32.9)
Others	7 (3.3)
Religion	
Hindu	180 (87.0)
Buddhist	24 (11.6)
Christian	3 (1.4)
Education level	
Basic and below	72(34.5)
Secondary	114 (55.3)
Above secondary	21 (10.2)
Years of working experience as a FCHV	
Less than or equal to 10 years (≤10 years)	69 (33.3)
More than 10 years (>10 years)	138 (66.7)
History of hypertension	
Yes	52 (25.1)
No	155 (74.9)
Family history of hypertension	
Yes	83 (40.1)
No	124 (59.9)

Knowledge towards hypertension among the study participants

Around 85% of the participants were aware of the correct range of normal blood pressure. While almost two-thirds (65.7%) correctly identified the range of blood pressure to measure hypertension in this study. The majority of the participants, 65.7% and 92.8% were aware that hypertension can cause stroke and heart attack respectively. More than half, 54.6% and 77.3% correctly responded that hypertension can cause cancer and kidney problems, respectively. However, only around 59% were aware that weight loss is a preventive strategy for hypertension in this study. Most of the participants (86.5%) correctly responded that a low intake of salt reduces the risk of hypertension, and around 86% knew that hypertensive patients should take medicine regularly once hypertension exists (Table 2).

Table 2: Knowledge on hypertension among the study participants.

Knowledge items	Correct response (n)	Percen -tage
The range for normal blood pressure is 120/80 mm of Hg	175	84.5
The correct category for high blood pressure is 160/100 mm of Hg	136	65.7
Hypertension can cause stroke	136	65.7
Hypertension can lead to heart attack	192	92.8
Hypertension can cause cancer	113	54.6
Hypertension can cause kidney problems	160	77.3
Hypertension will remain last forever once it exists	130	62.8
Weight loss is the preventive strategy for hypertension	122	58.9
Low intake of salt is the preventive strategy for hypertension	179	86.5
People having hypertension should follow medication throughout their life once it exists	179	86.5

Attitude towards hypertension among the study participants

The maximum number of the participants agreed that behavior changes i.e., diet modification (99.5%), eating fruits and vegetables (97.6%), low intake of edible oil (98.1%), avoiding smoking (95.7%), avoiding alcohol (97.1%), loosing body weight (94.7%), regular physical exercise (95.7%), reducing psychological stress (97.1%), adequate sleeping (93.7%) and regular monitoring of blood

pressure (99.5%) can prevent and reduces the risk of hypertension in this study (Table 3).

Factors associated with the knowledge on hypertension among the study participants

This study demonstrated education (7.7±1.5, p=0.001), religion (7.5±1.7, p=0.017), and family history of hypertension (7.8±1.7, p=0.018) were significantly associated with the knowledge towards hypertension (Table 4).

Factors associated with attitude towards hypertension among the study participants

This study demonstrated education (9.6±0.9, p=0.000) and history of hypertension (9.5±0.7, p=0.014) were significant with the attitude towards hypertension. Meanwhile, there was no association between other individual characteristics i.e. age, ethnicity, religion, working experience as an FCHV and family history of hypertension with attitude towards hypertension (Table 5).

Table 3: Attitude towards hypertension among the study participants.

Attitude items	Positive attitude (n)	Percentage
Diet modification helps to reduce the risk of hypertension	206	99.5
Eating fruits and vegetables can prevent the risk of hypertension	202	97.6
A low intake of edible oil can reduce the risk of hypertension	203	98.1
Avoiding smoking can prevent the risk of hypertension	198	95.7
Avoiding alcohol helps to prevent the risk of hypertension	201	97.1
Losing body weight prevents the risk of hypertension	196	94.7
Regular physical exercise can prevent the risk of hypertension	198	95.7
Reducing psychological stress can prevent the risk of hypertension	201	97.1
Adequate sleeping can prevent risk of hypertension	194	93.7
Regular monitoring of blood pressure reduces the risk of hypertension.	206	99.5

Table 4: Factors associated with knowledge on hypertension among the study participants.

Characteristics	Numbers (n)	Knowledge score Mean±SD	P value
Age (years)			
Below 40	63	7.7±1.8	0.188
40 and above	144	7.3±1.7	
Ethnicity			
Brahmin/Chhetri	132	7.6±1.6	0.08
Others	75	7.1±2.0	
Religion			
Hindu	180	7.5±1.7	0.017
Others	27	6.7±2.2	
Education			
At least basic level	72	6.9±2.1	0.001
Above basic level	135	7.7±1.5	
Working experience as a FCHV			
Lesser or equal to 10 years	69	7.5±1.8	0.809
More than 10 years	138	7.4±1.8	
History of hypertension			
Yes	52	7.5±1.8	0.783
No	155	7.4±1.8	
Family history of hypertension			
Yes	83	7.8±1.7	0.018
No	124	7.2±1.8	

Table 5: Factors associated with attitude towards hypertension among the study participants.

Characteristics	Numbers (N)	Attitude score Mean±SD	P value
Age (years)			
Below 40	63	9.7±0.5	0.440
40 and above	144	9.6±0.8	
Ethnicity			
Brahmin/Chhetri	132	9.6±0.8	0.929
Others	75	9.7±0.6	
Religion			
Hindu	180	9.7±0.7	0.929
Others	27	9.7±0.6	
Education			
At least basic level	72	8.0±1.9	0.000
Above basic level	135	9.6±0.9	
Working experience as a FCHV			
Lesser or equal to 10 years	69	9.6±0.7	0.299
More than 10 years	138	9.7±0.7	
History of hypertension			
Yes	52	9.5±0.7	0.014
No	155	8.9±1.6	
Family history of hypertension			
Yes	83	9.7±0.7	0.872
No	124	9.6±0.7	

DISCUSSION

This study has assessed knowledge and attitude towards hypertension among FCHVs of Bharatpur Metropolitan of Nepal. This study found that participants had good knowledge about causes/risks factors, long-term effects, and complications of hypertension. Around 85% correctly responded about the correct normal range of the blood pressure which is similar to the study conducted in Lebanon among hypertensive patients (88%).[18] In contrast to our study, only 30.2% Nigerian people had correctly responded the normal range of blood pressure.[19]

Similarly, most of the participants knew that low intake of salt (86.5%) and losing weight (58.9%) were the effective preventive strategies against hypertension which is consistent with previous study conducted in Lebanon i.e. 95.5% and 81%, respectively.[18] A good proportion of the participants (>60%) were aware that hypertension can cause the complications like stroke, heart attack, cancer and kidney problems that is comparable to studies conducted in Nigeria (65.4%), Zimbabwe (91.4%), Africa (92%) and Saudi (75.6%).[19-22]

Our study showed more than 90% of the participants were agreed that behavioral factors like diet modification, low intake of salt, avoiding smoking and alcohol, regular physical exercise, reducing stress and regular monitoring of blood pressure can help to reduce the risk of hypertension. All these results followed are compatible to the study conducted by Sulaiman et al among public, Rusmevichientong et al in Thailand and Kebede et al in East Africa.[21-23] However, a study conducted among hypertensive patients in Lebanon revealed only 46.8% and 24.3% agreed that regular physical exercise and avoiding smoke reduce the risk of hypertension.[18]

This study demonstrated the mean score of knowledge and attitude towards hypertension were significantly associated with the participants who had at least basic level education. Similar result was revealed in the studies conducted in Saudi, North Carolina, Addis Ababa [25] and Zimbabwe.[20,22,24,25] This might due to the higher the education among the people, they are more aware about their health and explore information through several resources like books, journals, online resources and healthcare professionals. Another reason is, educated people have better health literacy that help them to understand about health concerns. In addition to this study, a study conducted in Nepal revealed parental education level also enhances the awareness towards hypertension.[26]

This study elicited religions was significantly associated with awareness towards hypertension, which is in line with the study conducted in China.[27] It may be some religious communities often provide strong social support system and more likely to share health related information and help each other in adopting healthier life styles.

From this study, participants who had a family history of hypertension had better mean knowledge score than those who do not have family history of hypertension. This result was similar with the study conducted in Venezuela among hypertensive patients, and Nepal among students.[26,28] This

could be because having a relative or close family member with an illness increases one's curiosity towards that same illness.

This study found that the attitude mean score was significantly associated with an individual history of hypertension that is similar to the study conducted in Lebanon but contrary to the findings of Nigeria.[18,19] This could be as a result of constant counselling over the years as they visit a health care facility for the treatment. This study showed there was no association between family history of hypertension and attitude mean score. A similar result was reported by the study conducted in Ethiopia and Ghana.[29,30] In contrast to our study, this result was disagreement by the study conducted in Nigeria and Saudi.[19,22]

Strength and limitations

Our study included all the FCHVs of the Bharatpur Metropolitan of Chitwan district so that the findings of this study can be generalizable to all the municipalities of Nepal because of having same FCHVs program's structure. To the best of our knowledge, this study is one of the first community-based studies to assess knowledge and attitude of FCHVs towards hypertension in Nepal.

Besides strengths, there were a few limitations: important characteristics like rural vs urban FCHVs, health insurance, household income and employment were not included in this study that can impact the knowledge and attitude towards hypertension. Some of the results were compared with studies conducted among the community and patients-based studies due to the limited number of studies among FCHVs regarding hypertension.

CONCLUSION

FCHVs are grassroots volunteers who can contribute a vital role in the prevention of hypertension in Nepal. Assessment of knowledge among the FCHVs towards hypertension are crucial in developing the programs to reduce the burden of hypertension including other NCDs. Despite having satisfactory knowledge among the FCHVs about hypertension, some of the FCHVs were unable to correctly identify a systolic and diastolic range of blood pressure for hypertension, risk factors, and complications of hypertension. However, most of the FCHVs had a positive attitude toward the preventive strategies to reduce the risk of hypertension. This study findings suggested there is a need for a targeted orientation program toward hypertension for the FCHVs to improve their knowledge and beliefs towards hypertension.

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