

Attitude and self-care practice on hypertension among antihypertensive medication users in a tertiary care hospital Nepal

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Abstract

Background: Hypertension a “silent killer” is a serious global health problem, whose prevalence is increasing in Nepal.

Objective: This study aimed to determine the attitude and practice of hypertension among anti-hypertensive medication users in a tertiary care teaching hospital in western Nepal.

Methodology: A hospital-based cross-sectional study design was used among 136 hypertensive patients under medication, aged ≥ 30 years, and visiting medical outpatient department, medical ward, and geriatric ward, using a non-probability convenience sampling technique. Semi-structured questionnaires were used for data collection through interviews. Descriptive and inferential statistics were used, and a p value < 0.05 was considered statistically significant.

Results: Most of the patients were male (56.6%), mean \pm standard deviation age was 56.74 ± 12.58 . Majority of them were Hindu (69.9%), upper caste people (29.4%), illiterate (22.1%), and house maker (27.2%). Half of the patients (50.7%) had a positive attitude and more than half (52.2%) had performed adequate self-care practice. Selected variables such as educational status and dietary pattern and attitude were significantly associated, whereas no association was found between sociodemographic variables and self-care practice. Attitude and self-care practices were found strongly associated with one another ($p = 0.002$).

Conclusion: Our study found that half of the study population had positive attitude, and more than half of them had performed adequate self-care practice. Hence, educational interventions and awareness programs on dietary aspects should be focused for improving the attitude and practice of all the patient groups.

Keywords

Attitude, hypertension, hypertensive patients, self-care, practice

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Introduction

Hypertension, also known as “silent killer,” is a serious public health problem globally with an age-standardized prevalence of 24.1% in men and 20.1% in women, respectively.¹ By the year 2025, approximately 1.56 billion global population are expected to suffer from this disease² and two-thirds of those living in economically developing countries. Hypertension is the leading cause of death and disability, which is responsible for 75 million disability-adjusted life-year gains (DALYs) and approximately 7.5 million deaths (12.8 of all-cause deaths) worldwide.³ Untreated or poorly controlled high blood pressure can result in large medical, economic, and human costs, with an estimated 10% of health care spending directly related to increased blood pressure and its complications.⁴ Despite

the high prevalence, blood pressure control rates among hypertensive patients are reported to be very low, that is, only 30%–34% in developing and 33%–38% in developed countries.⁵ Hypertension is an important risk factor for

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cardiovascular disease, renal, and eye diseases.⁶ According to the World Health Organization report, complications of hypertension account for 9.4 million deaths each year, which is greater than that caused by all other infectious diseases in combination. It is also responsible for approximately 45% of deaths due to heart disease and 51% of deaths due to stroke.^{3,4} The prevalence of hypertension in Nepal ranges from 23% to 48%. In rural area, prevalence of hypertension is 41.55%,⁷ in semi-urban 28.9%,⁸ in an urban area 32.5%,⁹ and in mid-Western region 48%.¹⁰ Similarly, in people above 18 years of age, the prevalence of hypertension is 25.1%.¹¹ However, control of hypertension is low in Nepal and ranges from 11.7%¹² to 24%.¹³

Evidence suggests that attitude and self-care practices are an important aspects to control blood pressure and related heart and renal complications. Self-care practice includes taking prescribed medications, consumption of low salt and low fat diet, quit smoking, limiting alcohol, reducing stress and weight, regular physical exercise, self-monitoring of blood pressure, and regular healthcare visits.¹⁴ Consumption of a combination of diets such as fruits, vegetables, and low-fat dairy products lowers systolic blood pressure (SBP) by 5.5 mmHg and diastolic blood pressure (DBP) by 3 mmHg.¹⁵ Salt intake not more than 2.4 g per day lowers SBP by 2–8 mmHg.¹⁶ Similarly, regular aerobic exercise for 30 min reduces SBP by 4–9 mmHg and alcohol consumption reduction by 50% reduces SBP by 2–7 mmHg and DBP by 2–5 mmHg.^{17,18} Moreover, weight reduction to normal lowers SBP by 3–7 mmHg and DBP by 3–9 mmHg.¹⁹ People often do not implement the recommended self-care practices and results with uncontrolled blood pressure. Despite the high prevalence, studies examining self-care practices among hypertensive patients are scarce in Nepal. Information from such studies will help to modify treatment options, develop interventional programs aimed at increasing disease self-management behaviors, reducing adverse outcomes, and provide better healthcare services. To fill this gap, our study aimed to assess the attitude and self-care practices on hypertension and association of attitude and self-care practice with socio-demographic variables among hypertensive medication users in a tertiary care teaching hospital in western Nepal.

Methods

Study design and population

A hospital-based cross-sectional study was conducted from October to December 2017 at Western Regional Hospital (WRH), Pokhara-10, Kaski, Nepal. Inclusion criteria: All the new and old hypertensive patients under anti-hypertensive medication, aged ≥ 30 years, both sex, visiting medical outpatient department, medical ward, and geriatric ward, and those willing to participate were included in the study. Exclusion criteria: Pregnant women and unresponsive participants were excluded.

Sample size and sampling technique

We used a non-probability convenience sampling technique in this study. The sample size was calculated using Cochran formula $no = Z^2 pq/e^2$, where no = minimum sample size, z = standard normal variate, p = estimated prevalence or proportion of population, $q = 1 - p$, e = desired level of precision or margin of error and confidence interval = 95%. Therefore, z -score = 1.96. Estimated prevalence $p = 28\%$ (based on study conducted in western Nepal⁷ $q = 72\%$). Taking 95% confidence interval and 7% margin of error and 10% of non-response rate, the sample size was calculated $136. no = 1.96^2 \times 28 \times 72 / 7^2 = 124$.

$$\begin{aligned} \text{Sample size} &= no + 10\% \\ \text{non-response rate} &= 124 + 12 = 136 \end{aligned}$$

Study variables

Dependent variables. Attitude and self-care practices of hypertensive patients

Independent variables. Non-modifiable factors: Social determinants (age, gender, educational status, monthly income, occupation, and family history of hypertension) and metabolic disorders (diabetes, kidney diseases, and chronic artery diseases).

Modifiable factors: Lifestyle-related factors (smoking, alcoholism, unhealthy dietary pattern, and physical exercise) and confounding variables (previous information about hypertension and availability of health facilities).

Data collection

The data on attitude^{2,20,21} and self-care practices^{2,22–24} of 136 patients were collected using a pre-tested structured questionnaire through face-to-face interview method. The questionnaire was adapted from similar studies and other related documents investigating KAP and self-care practice of hypertension. A standard proforma was designed to collect data on sociodemographic information. There were 13 questions for assessing sociodemographic characteristics, 10 statements for assessing attitude (5 positive and 5 negative), and 22 questions for assessing self-care practice. The English form of the questionnaire was translated into Nepali and pilot testing was done on 10% of the total sample size, that is, 14 hypertensive patients who met our inclusion and exclusion criteria. The reliability of attitude of hypertensive patients and self-care practice using Karl Pearson's correlation coefficient formula by split-half method, was 0.81 and 0.84, respectively. The patients involved in the pilot test were not included in the main study.

Data measurements

For attitude, where the total score was 50, first the median of the total result was calculated and score > 41 was defined as

positive attitude and score ≤ 41 as negative attitude. Likewise, for self-care practice with 20, a total score, the median was calculated and a score >16 was regarded as adequate practice and ≤ 16 as inadequate practice.

Statistical analysis

The data were entered in Microsoft Excel version 13 and analyzed using IBM-SPSS 20.0 (IBM Corporation, Armonk, NY, USA). The descriptive data were analyzed using mean, median, frequency, and percentage. Inferential statistics were used to assess the relationship between selected variables and attitude and self-care practice. $P < 0.05$ was considered statistically significant.

Ethics

Ethical approval for this study was obtained from the Institutional Review Committee (IRC) of Pokhara University Research Center (PURC) (Ref.No:85/073/74), and prior data collection permission was taken from the WRH, Pokhara, Nepal. The patients were fully informed about the nature and purpose of the study in the Nepali language, and their written consent was obtained prior to data collection. The personal details of the patients were kept confidential, and anonymity was maintained.

Results

The principal characteristics of the study population are described in Table 1. Of the 136 hypertensive patients, 56.6% were male. They had a mean \pm age of 56.74 ± 12.58 years; 26.5% were in the age range of 30–40 years. The majority (69.9%) of the hypertensive patients were Hindus and very fewer (0.7%) were of other religions like Shikh. Regarding ethnicity, 29.4% patient's belonged to upper caste and only 4.4% belonged to religious minorities. Similarly, a higher proportion (69.9%) of patients were married and very few (2.9%) were divorced.

Most of the patients (22.1%) were illiterate, and only 8.1% of them had a bachelor and above level of education. About 16.2% of the patients had a family income of less than 7000 and 48.5% of them had an income range of 21,000 and above. About 27.2% were homemakers, 14.7% were involved in agriculture, 19.1% were self-employed, 10.3% were employed in the government sector, 7.4% were employed in the private sector, 16.2% were unemployed, and 5.1% were retired.

Likewise, half of the patients (50.7%) had reported a family history of hypertension. Among the total 42.03% told that their father or mother had hypertension, 23.18% told their son or daughter had hypertension, 10.15% told their grandparents had hypertension, and 24.64% complained that their husband or wife had hypertension. Besides, 41.2% had no any comorbid condition but 23.5% complained of having diabetes mellitus. The majority (78.7%) were non-vegetarian. Moreover, 98.5% of the patients had easy access to healthcare services,

and only 1.5% of them complained of non-availability of health service facilities within 30 min of walking distance.

Table 2 reveals the attitude of hypertensive patients toward each statement. The majority (63.2%) of the patients had a positive attitude toward the positive statement, that is, hypertension is a major cardiovascular diseases. More than one-third (34.3%) patients strongly agreed that smoking and alcohol consumption increase the risk of hypertension and no respondent disagreed on that statement. 36.8% patients strongly disagreed that a balanced diet and healthy lifestyle play an important role in the causation of hypertension but also 8.1% patients agreed to the same statement. About 14% patients strongly agreed that only salt intake reduction is sufficient for prevention of hypertension and 30.1% showed strong disagreement to this statement. Similarly, 54.4% patients strongly agreed that regular physical exercise is essential for maintaining a healthy lifestyle and 8.1% disagreed to this.

Likewise, 43.4% and 36.8% patients, respectively, showed strong disagreement and disagreement that regular blood pressure level checking is not necessary for hypertensive patients. Most of the patients (52.9%) strongly agreed, and 5.9% strongly disagreed that regular follow-up for hypertensive patients is important. To the negative statement, hypertension usually does not cause any symptoms, only 11.8% patients strongly agreed and 41.2% disagreed. About 42.6% disagreed and only 6.6% agreed that regular intake of medication is not necessary for hypertensive patients. To the last positive statement, hypertension may lead to various life-threatening complications if not managed in time, majority (78.7%) showed strong agreement, as shown in Table 2.

Among 136 patients, the majority (95.6%) were found to follow a healthy dietary pattern. More than three-fourth (77.9%) patients did not regularly take fried foods. Greater part of patient population (85.3%) added extra salt to their diet. Most of them (71.3%) did not take red or smoked meat. One hundred and thirty (95.6%) and 105 (77.2%) patients reported taking more than five servings of green leafy vegetables and fruits, respectively.

Similarly, only one-fourth (25%) patients were found to have a habit of smoking and drinking alcohol, 69.1% patients had confessed that they performed physical exercise for more than 30 min daily, among which 46.8% patients exercised six or more days in a week. About 44.68% patients used to exercise with the purpose of reducing hypertension, while 53.32% used to exercise with the intention of reducing weight. Maximum patients (82.4%) had reported taking hypertensive medication. About 70.58% of the patients told that that they visited for follow-up as per physician advice, and 91.2% of them regularly checked their blood pressure, and 43.54% of them had the habit of checking it weekly, as illustrated in Table 3.

The attitude of hypertensive patients was high with a mean (\pm SD) of $40.78 (\pm 4.37)$ and a mean percentage of 81.56. Similarly, the self-care practice of the patients was adequate with a mean (\pm SD) value of $14.66 (\pm 3.48)$ and a mean percentage of 73.3, as shown in Table 4.

Table 1. Socio-demographic determinants of patients (n = 136).

Characteristics	Categories	n (%)
Age	30–80	136 (100.0)
Sex	Male	77 (56.6)
Religion	Hindu	95 (69.9)
	Buddhist	28 (20.6)
	Christian	2 (1.5)
	Muslim	10 (7.4)
	Others	1 (0.7)
Ethnicity	Dalit	26 (19.1)
	Disadvantaged non-dalit tarai caste	11 (8.1)
	Religious minorities	6 (4.4)
	Relatively disadvantaged janajati	22 (16.2)
	Relatively advantaged janajati	31 (22.8)
Marital status	Upper caste people	40 (29.4)
	Unmarried	9 (6.6)
	Married	95 (69.9)
	Divorced	4 (2.9)
Educational status	Widow/widower	28 (20.6)
	Illiterate	30 (22.1)
	Informal schooling	24 (17.6)
	Primary	25 (18.4)
	Secondary	25 (18.4)
Monthly family income	Higher secondary	21 (15.4)
	Bachelor and above	11 (8.1)
	Less than 7,000	22 (16.2)
	7,000–14,000	23 (16.9)
	14,000–21,000	25 (18.4)
Occupation	21,000 and above	66 (48.5)
	House maker	37 (27.2)
	Agriculture	20 (14.7)
	Self-employed	26 (19.1)
	Government sector	14 (10.3)
	Private sector	10 (7.4)
	Unemployed	22 (16.2)
Family history of hypertension	Retired	7 (5.1)
	Present	69 (50.7)
Family member having hypertension (n = 69)	Absent	67 (49.3)
	Parents	29 (42.03)
	Offspring	1 (23.18)
	Grandparents	7 (10.15)
Presence of comorbidities	Partner	17 (24.64)
	No any	56 (41.2)
	Diabetes mellitus	32 (23.5)
	Kidney diseases	10 (7.4)
	Asthma	21 (15.4)
Dietary pattern	Other diseases	17 (12.5)
	Vegetarian	29 (21.3)
	Non-vegetarian	107 (78.7)
Availability of health services at 30 min walking distance	Available	134 (98.5)
	Not available	2 (1.5)

Others: Shikh, Other diseases: Skin problems, psychological disorders, gastritis, reproductive problems.

Nearly equal number of hypertensive patients were found to have a positive (50.7%) and negative (49.3%) attitude regarding hypertension. Likewise, more than half of the patients (52.2%) were found to perform adequate self-care practice, as depicted in Table 5.

A significant association was found between selected variables such as educational status, dietary pattern, and attitude of hypertensive patients, whereas there was no significant association with other variables like age, gender, religion, ethnicity, occupation, monthly income, and family

Table 2. Attitude of hypertensive patients (n = 136).

Statements	Response				
	Strongly agree n (%)	Agree n (%)	Undecided n (%)	Disagree n (%)	Strongly disagree n (%)
Hypertension is common cardiovascular disease in adult.	86 (63.2)	34 (25.0)	8 (5.9)	8 (5.9)	0 (0.0)
Habit of smoking and alcohol consumption increases risk for hypertension.	63 (46.3)	60 (44.1)	1 (0.7)	12 (8.8)	0 (0.0)
Balanced diet and healthy lifestyle plays an important role in causation of hypertension.	18 (13.2)	11 (8.1)	13 (9.6)	44 (32.4)	50 (36.8)
Only salt intake reduction is sufficient for prevention of hypertension.	19 (14.0)	23 (16.9)	18 (13.2)	35 (25.7)	41 (30.1)
Regular exercise is essential for maintaining healthy lifestyle.	74 (54.4)	36 (26.5)	15 (11.0)	11 (8.1)	0 (0.0)
Regular blood pressure level checking is not necessary for hypertensive patient.	6 (4.4)	7 (5.1)	14 (10.3)	50 (36.8)	59 (43.4)
Regular follow-up for hypertensive patient is important.	72 (52.9)	34 (25.0)	10 (7.4)	12 (8.8)	8 (5.9)
Hypertension usually does not cause any symptoms.	16 (11.8)	9 (6.6)	14 (10.3)	56 (41.2)	41 (30.1)
Regular intake of medication is not necessary for hypertensive patient.	10 (7.4)	8 (5.9)	5 (3.7)	58 (42.6)	55 (40.4)
Hypertension may lead to various life-threatening complication if not managed in time.	107 (78.7)	25 (18.4)	1 (0.7)	0 (0.0)	3 (2.2)

Table 3. Self-care practice of hypertensive patients (n = 136).

Variables	Categories	n (%)
1. Follow a healthy eating pattern	Yes	6 (4.4)
2. Take fried food regularly	Yes	30 (22.1)
3. Adding extra salt in regular diet	Yes	20 (14.7)
4. Take red meat and smoked meat	Yes	39 (28.7)
5. Take ≥ 5 green leafy vegetable servings	Yes	130 (95.6)
6. Take ≥ 5 fruits servings	Yes	105 (77.2)
7. Smoking habit	Yes	34 (25.0)
8. Alcohol consumption habit	Yes	34 (25.0)
8.1. How often (n = 34)	Daily	17 (50.0)
	Weekly	4 (11.76)
	Occasionally	13 (38.24)
8.2. Amount of alcohol (n = 34)	Quarter (180 mL)	26 (76.48)
	Half bottle (375 mL)	3 (8.82)
	Bottle (750 mL)	5 (14.7)
9. Physical exercise of at least 30 min	Yes	94 (69.1)
10. Specific exercise	Yes	93 (68.4)
11. Days of exercise in a week (n = 94)	<3 days	11 (11.71)
	4 days	13 (13.83)
	5 days	26 (27.66)
	>6 days	44 (46.8)
12. Purpose of exercise (n = 94)	Hypertension reduction	42 (44.68)
	Weight management	52 (53.32)
13. Taking any anti-hypertensive medication	Yes	112 (82.4)
13.1. Take blood pressure medicine regularly (n = 112)	Yes	111 (99.1)
13.2. Habit of increasing/decreasing doses (n = 112)	Yes	2 (1.79)
13.3. Take blood pressure medicine at same time every day (n = 112)	Yes	106 (94.65)
13.4. Take recommended number of blood pressure medicine (n = 112)	Yes	109 (97.32)
14. Visit for follow-up	As physician advice	96 (70.58)
	6 monthly	20 (14.7)
	When symptoms worsen	14 (10.3)
	Rarely	6 (4.42)

(Continued)

Table 3. (Continued)

Variables	Categories	n (%)
15. Habit of checking blood pressure regularly	Yes	124 (91.2)
	No	12 (8.8)
15.1. If yes, how often (n = 124)	Daily	16 (12.90)
	Weekly	54 (43.54)
	Monthly	37 (29.83)
	When symptoms worsen	17 (13.73)

Table 4. Attitude and self-care practice of hypertensive patients.

Response	Maximum score	Median	Mean \pm SD	Mean percentage (%)
Attitude	50	41	40.78 \pm 4.37	81.56
Self-care practice	20	16	14.66 \pm 3.48	73.3

SD: standard deviation.

Table 5. Attitude and self-care practice scoring of hypertensive patients (n = 136).

Variables	Category	n (%)
Attitude	Negative (≤ 40)	67 (49.3)
	Positive (> 40)	69 (50.7)
Practice	Inadequate (≤ 16)	65 (47.8)
	Adequate (> 16)	71 (52.2)

history, as illustrated in Table 6. In contrast, no significant association was found between sociodemographic variables and self-care practice, as depicted in Table 7. As a whole, a significant association was found between attitude and self-care practice, as shown in Table 8.

Discussion

Our study evaluated the attitude and self-care practices of hypertension among hypertensive patients taking anti-hypertensive medication attending the medical outpatient department, medical ward, and geriatric ward of a tertiary hospital in Nepal. The majority of our study patients were male, aged (SD) 56.74 (12.58) years, Hindu, upper caste, married, illiterate, home maker, with monthly family income of 21,000 and above, and non-vegetarian. Most of them had a family history of hypertension and health services nearby their residence.

Our study revealed that a little more than half of the study population had a positive attitude toward hypertension and had implemented adequate self-care practices to control hypertension than a study conducted in western Nepal and Nigeria.^{24,25} Most of our study patients have a great understanding and positive attitude toward the risk of excessive salt intake to prevent hypertension. Many studies have studied about this issue and found that a reduction in salt intake

in the diet is beneficial for hypertensive patients who are under medication.²⁶ A healthy diet burns up more calories, preventing obesity and in the long run prevents hypertension. Poor dietary habits like salty and fatty foods, smoking and drinking alcohol increase the prevalence of hypertension. The practice of salt reduction was found adequately practiced by our study population. Similarly, many patients quitted smoking, drinking alcohol habit, consuming green vegetables and fruits, to avoid fried food and red and smoked meat in their diet. These findings suggest that patients were aware of their illness, risk factors, and protective measures for maintaining normal health. Our findings are supported by a previous study from Japan, which reported that most of its patients believed that salty and fatty diet and smoking are important factors in hypertension.²⁷ One-fourth of the patients confessed their smoking and alcohol drinking habits, which is comparably higher than that illustrated by the STEPS survey 2013 by NHRC.²⁸ Drinking alcohol is more associated with smoking and both of them are strong risk factors for cardiovascular diseases.^{29,30} Evidence suggests that the consumption of alcohol beyond 20 g for men and up to 10 g for women is risky.³⁰ Likewise, the attitude and practice of physical exercise were found good enough in our study. Mostly physical exercise is used in conjugation with weight reduction for the management of hypertension. The majority of patients reported involving themselves in specific exercise for more than 6 days a week for at least 30 min. In contrast, a study from Malaysia reported poor attitude and practice of exercise in its hypertensive patients with a low score for exercising at least three times per week.³¹ Increased physical activity along with health dietary patterns, low salt and fatty foods, and reduction in alcohol intake reduces the relative risk of hypertension.³² The attitude and practice of patients regarding medication adherence in our study was found superior to that found in studies from central Nepal and Pakistan.^{33,34} The majority of our patients reported taking their antihypertensive medication regularly, the same number and the same recommended dose without alteration at the same time everyday. They confessed that they are more conscious of their health, check their blood pressure mostly once weekly, and visit the hospital for follow-up, as advised by their physician.

Our study showed a significant association between attitude and educational status ($p=0.010$) and dietary pattern

Table 6. Association of attitude of hypertensive patients with demographic variables (n = 136).

Variables	Categories	Total scores		P value
		Median ≤41, n (%)	Median >41, n (%)	
Age	<54	27 (46.6)	31 (53.4)	0.585
	>54	40 (51.3)	38 (48.7)	
Sex	Male	37 (48.1)	40 (51.9)	0.747
	Female	30 (50.8)	29 (49.2)	
Ethnicity	Upper caste	24 (60.0)	16 (40.0)	0.094
	Others	42 (44.2)	53 (55.8)	
Educational status	Illiterate	21 (70.0)	9 (30.0)	0.010*
	Others	46 (43.4)	60 (56.6)	
Monthly family income	Less than 7,000	12 (54.5)	10 (45.5)	0.734
	7,000–14,000	9 (39.1)	14 (60.9)	
	14,000–21,000	13 (52.0)	12 (48.0)	
	21,000 and above	33 (50.0)	33 (50.0)	
Occupation	Home maker	22 (59.5)	15 (40.5)	0.146
	Others	45 (45.5)	54 (54.5)	
Family history of hypertension	Present	33 (47.8)	36 (52.2)	0.733
	Absent	34 (50.7)	33 (49.3)	
Dietary pattern	Vegetarian	22 (75.9)	7 (24.1)	0.001***
	Non-vegetarian	45 (42.1)	62 (57.9)	

***Highly significant. *Significant.

Table 7. Association of self-care practice of hypertensive patients with demographic variables (n = 136).

Variables	Categories	Total scores		P value
		Median ≤16, n (%)	Median >16, n (%)	
Age	<54	30 (51.7)	28 (48.3)	0.429
	>54	35 (44.9)	43 (55.1)	
Sex	Male	39 (50.6)	38 (49.4)	0.446
	Female	26 (44.1)	33 (55.9)	
Ethnicity	Upper caste	24 (60.0)	16 (40.0)	0.094
	Other caste	42 (44.2)	53 (55.8)	
Educational status	Illiterate	14 (46.7)	16 (53.3)	0.889
	Others	51 (48.1)	55 (51.9)	
Monthly family income	Less than 7,000	12 (54.5)	10 (45.5)	0.734
	7,000–14,000	9 (39.1)	14 (60.9)	
	14,000–21,000	13 (52.0)	12 (48.0)	
	21,000 and above	33 (50.0)	33 (50.0)	
Occupation	Home maker	18 (48.6)	19 (51.4)	0.903
	Others	47 (47.5)	52 (52.5)	
Family history of hypertension	Present	32 (46.4)	37 (53.6)	0.737
	Absent	33 (49.3)	34 (50.7)	
Dietary pattern	Vegetarian	15 (51.7)	14 (48.3)	0.633
	Non-vegetarian	50 (46.7)	57 (53.3)	

($p=0.001$) in hypertensive patients. This means that patients those with higher education and who prefer vegetarian diets have better attitudes than those with lower education levels and non-vegetarians. In addition, no sociodemographic variables were found to be significantly associated with self-care

practice regarding hypertension among the study population. In contrast, a study from central Nepal showed a significant association of knowledge, attitude, and practice with age, level of education, and duration of hypertension.³³ Moreover, a strong relationship was found between attitude and

Table 8. Association between attitude and self-care practice of hypertensive clients (n = 136).

Attitude	Total scores of practice		P value
	Median ≤ 16, n (%)	Median > 16, n (%)	
Negative	41 (61.2)	26 (38.8)	0.002***
Positive	24 (34.8)	45 (65.2)	

***Highly significant.

self-care practice in hypertensive patients ($p=0.002$), which was consistent with the finding of a study from Iran.²

There are some limitations to our study. One of the important limitations is knowledge level of patients with hypertension is not assessed. The other is the low sample size. Yet, the self-reported practice by participants is prone to bias is the other important limitation. Besides, tobacco use is widely prevalent in Nepal, but our study failed to include specific question on tobacco use and summed up as smoking. Therefore, the generalizability of the findings decreases to other healthcare settings. Despite these limitations, our study provides an insight into the attitude and self-care practices among hypertensive patients in the medical outpatient department, medical ward, and geriatric ward and the association between them. The findings abstained might be useful as a source of reference for conducting such research on a large scale in the future.

Conclusion

Our study found that half of the study population had positive attitude, and more than half of them had performed adequate self-care practice. There was a significant association between education status and dietary pattern and attitude of hypertensive patients, whereas no association was found between sociodemographic variables and self-care practices of patients. Moreover, attitude and self-care practice of hypertensive patients were found to be strongly associated ($p=0.002$). Our study highlights the need to focus on educational interventions and awareness programs on the aspect of educational and dietary habits that could improve the attitude and practices of all the patient groups, and hence prevent further complications of the disease.

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Declaration of conflicting interests

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Disclosure

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Ethical approval

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