

SELF-CARE MANAGEMENT AND ITS ASSOCIATED FACTORS AMONG PATIENT WITH HYPERTENSION IN NEPAL

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ABSTRACT

Background: Hypertension is currently a common and serious health issue that leads to cardiovascular disease and premature death around the world. Self-care practice is essential for blood pressure control and reduction of hypertension complications of cardiovascular and renal diseases. The objective of this study is to assess the level of self-care management and its associated factors among patients with hypertension.

Methods: The cross-sectional study was conducted at the Internal medicine and Cardiac outpatient department of Kathmandu University Hospital, Dhulikhel on 386 participants diagnosed with hypertension with six months of diagnosis and age of 30-80 years. The participants were recruited conveniently in the study. Face to face interviews with participants using Hypertension Self-Care Profile (HTN-SCP) and Multidimensional Scale of Perceived Social Support (MSPSS) were used to assess self-care management and perceived social support. Descriptive and inferential statistics were performed using SPSS version 23.

Results: The mean age of the participants was 57.39 years. Half of the participants (52.3 %) had poor self-care practice. There is significant association between level of self-care practice with religion ($p < 0.001$), educational level ($p < 0.001$), area of residence ($p = 0.001$), income ($p < 0.001$) and perceived social support ($p = 0.001$).

Conclusions: The present study revealed that half of the participants had poor self-care practice. Based on the results, the study concluded that good self-care practices and social support influence better self-care practice among hypertensive patients which may eventually help to prevent complications in the coming future.

INTRODUCTION

Hypertension is currently the leading cause of non-communicable diseases (NCDs) and premature death, contributing to more than half of all strokes and coronary artery disease worldwide. Self-care involves medication adherence, consumption of low-sodium and low-fat diet, engaging in physical activity, not smoking, maintaining healthy weight, and reducing stress.^{1,2} Hypertension affects an estimated 1.28 billion adults aged 30 to 79 years worldwide, with the majority (two-thirds) residing in low- and middle-income nations.³ Hypertension is anticipated to rise to more than 500 million people in India and China by 2025.⁴ According to WHO, among South Asian countries, Nepal has been reported as the second highest proportion of hypertensive people (27.3%) after Afghanistan (29%).⁵

According to the World Health Organization, 17 million deaths occur worldwide because of cardiovascular diseases (CVDs) every year, out of which complications of hypertension alone account for 9.4 million deaths.⁶ Also, unhealthy diet, sedentary lifestyle, alcohol and tobacco consumption are the

contributing factors of high blood pressure.⁷ Individuals who are actively involved in their own treatment decisions have better health results.⁸ It involves medication adherence, consumption of low-sodium and low-fat diet, engaging in physical activity, reducing alcohol intake, not smoking, maintaining healthy weight, self-monitoring blood pressure, regular follow up and reducing stress.⁹

Various factors may affect hypertension self-care practice. These factors may include demographic factors such as age, gender, income, education level, employment, health literacy and health related factors such as BMI, illness duration and hypertension knowledge and social support.¹⁰⁻¹⁵

In Nepal very few studies had been conducted on self-care management and its associated factors. Therefore, the aim of the study is to assess self-care management and its associated factors among hypertensive patients.

METHODS

This study was a hospital based cross-sectional study among

the patients with hypertension attending internal medicine and cardiac outpatient department in Dhulikhel Hospital.

Patients diagnosed with hypertension for at least 6 months, of age group 18-80 years, under medications and who understands Nepali language were included in the study.

A total of three hundred eighty-six (386) participants were conveniently sampled for the study which was calculated from previous study conducted in the health center of Singur, India where the good self-care practice was present among 37.1% participants.⁶

The socio-demographic characteristics include age, sex, marital status, religion, ethnicity, educational level, area of residence, income that were obtained from the participants by questioning.

Health related characteristics including BMI, duration, co-morbidity, family history of hypertension were obtained from both the participants by questioning as well as referring to the patient files.

Hypertension Self-Care Profile (HTN-SCP) was used to assess the hypertension self-care practice in this study. Internal consistency reliability coefficients ranged from 0.83 to 0.93.¹⁶

The HTN-SCP is a composite questionnaire including three separate instruments i.e hypertension, self-care behavior, motivation for self-care, and self-efficacy, respectively. In this study self-care behavioral score which consists of 20-item measures with each question having 4 response options: 1=Never, 2=sometimes, 3=frequently, 4=always was used. From the total participants, 51.098% scored below the mean on the HBP-SCP, indicates poor self-care practice.

Category of Self-care practice

Poor self-care practice < 51 %
Good self-care practice ≥ 51 %

Multidimensional Scale of Perceived Social Support (MSPSS) was used for the measurement of perceived social support. The internal consistencies of the entire scale were good, with a Cronbach's α of 0.87, and with sub-scales scores of 0.84, 0.85 and 0.74 for friends, family and significant others respectively.¹⁷⁻¹⁸ The MPSS is a 12-items tool that evaluates perceived social support in the three dimension of the family (questions 3, 4, 8, 11), friends (questions 6, 7, 9, 12), and specific individual (questions 1, 2, 5, 10). This tool is scored on a seven-point Likert scale ranging from 1=very strongly disagree to 7= very strongly agree. The minimum and maximum obtained scores of the MSPSS are, respectively, 12 and 84, and higher scores represent higher social support. From the total participants, 64.041% scored below the mean on the MSPSS, indicating poor perceived support.

Category of Perceived social support

Poor perceived social support < 62 %
Good perceived social support ≥ 62 %

Written permission was taken from the head of outpatient department (OPD) of Internal Medicine of Dhulikhel Hospital. Then the research proposal was submitted to KUSMS IRC (Kathmandu University School of Medical Sciences Institutional Review Committee) for approval to conduct the study. After approval from the KUSMS IRC, the actual data collection was started. Participants were recruited by using convenient sampling.

Firstly, the researcher self-introduced to participants and explained the purposes of conducting the study. After a short introduction, individual participants meeting inclusion criteria were included as a part of study. Both written and verbal informed consent was taken voluntarily from the participants. After registration, participants were taken to a separate area in cardiac and medicine OPD which was free from the crowd to maintain privacy. Individual code was provided to each participant for maintaining anonymity. Researchers both asked and went through the medical documents of the patient to find out the presence of other medical conditions. Interviews with semi structured and structured questionnaires were taken with participants by the researcher herself for socio-demographic data, health related data, hypertension self-care practice was measured by using HTN-SCP and social support by MSPSS. Anthropometric measurement such as height was taken using measuring scale, weight by weighing machine which was available in the study site. Same measuring tape and weighing machine were used throughout the study. BMI was calculated by using the formula weight in kilogram divided by height in meter square.

At last, data was checked for completeness and stored in a safe place. The timing of cardiac OPD was 9 am- 4pm. The average 10-15 participants were taken each day. The period of data collection was from 18th Nov to 24th December 2020.

Obtained data was checked to assure the completeness and duplication by using Excel. Then the data was coded and entered into the Statistical Package for Social Science (SPSS version 23). The obtained data was analyzed on the basis of the objectives of the study using descriptive statistics and inferential statistics. Demographic variables were analyzed in terms of mean, frequencies, and percentages. Hypertension Self-care practice level and perceived social support score were presented in the form of frequency and percentage. Chi-squared was used to determine the association between levels of self-care practice with selected demographic variables, health related data and social support.

RESULTS

Among all the study participants, the mean age of the participants was 57.39; nearly half of the participants (46.1%)

belonged to the age between 40 and 59 years. Among 386 participants half 59% were female, majority (88.6%) were currently married/living with a man/woman. Hinduism was the most preferred religion among participants with 85.8 %. With respect to ethnicity, half of the participants (51%) were Janjati. Mean income of the participants was 17866.58. Regarding the Educational level, nearly half of participants (47.9 %) were Illiterate/Non-formal. Similarly, two-third (66.1 %) belong to urban municipalities (Table 1).

Table 1: Socio-demographic characteristics of the participants (n=386)

Parameters	Characteristics	Frequency (%)
Age in completed years	<40	32 (8.3)
	40-59	178 (46.1)
	≥60	176 (45.6)
	Mean±SD	57.39±11.32
Sex	Male	197 (59.0)
	Female	189 (49.0)
Marital status	Currently married/ Living with a man/ woman	343 (88.8)
	Single	43 (11.2)
Religion	Hindu	331 (85.8)
	Buddhist	42 (10.8)
	Christian	7 (1.8)
	Muslim	6 (1.6)
Ethnicity	Brahim/Chhetri	165 (42.7)
	Janjati	198 (51.3)
	Dalit (kami, damai, sarki)	23 (6.0)
Income	≤15000	243 (63.0)
	≥15001	143 (37.0)
	Median	15000.00
Educational level	Illiterate/Non-formal	186 (48.2)
	Primary level	76 (19.7)
	Lower secondary level	75 (19.4)
	Higher secondary level	30 (7.8)
	Bachelor or above	19 (4.9)
Area of residence	Rural municipality	131 (33.9)
	Urban municipality	255 (66.1)

Out of total participant's nearly half (47.2 %) had over weight followed by normal weight participants (26.9 %). Nearly half of the participants (44.8%) had known their diagnosis for 1-5 years. Maximum of participants 55.2% had comorbidities. The most common self-reported co-morbidity was diabetes mellitus, which was found among two-third of the participants (65.5 %), followed by heart disease (15.5%), COPD (6.0%). Regarding the family history, half of participants (50.8%) had a

family history of hypertension (Table 2).

Self-care practice questionnaire of the participants

In this study, more than one third (38.6 %) of the total participants always take part in regular physical activity. Out of total participants, most (97.9 %) of the participants were rarely/ never read information on sodium content. Similarly more than one third (39.9%) of the participants always consumed less than 1 teaspoon of table salt per day. Around 37.8% and 11.7% always had limited total calorie intake from fat and ate fruits and vegetables daily respectively. Majority (76.4%) of the participants had always practiced moderation in drinking alcohol daily. Similarly most (81.6 %) of the participants had always practiced non-smoking. Regarding blood pressure monitoring, nearly one quarter (21.0%) had never monitored their blood pressure regularly. Likewise nearly half of the participants (47.7 %) were involved in activities that can lower stress.

Perceived Social Support questionnaire of the participants

Among all the study participants, more than one-third of the participants (44.0%) strongly agree with the statement that there is a special person who is around when I am in need. Nearly one-third of the participants (21.0%) strongly agreed with the statement that my family really tries to help me. Nearly one-third of the participants (30.3%) mildly agreed with the statement that my friends really try to help me.

Table 2: Health-related characteristics of the participants (n=386)

Parameters	Characteristics	Frequency (%)
BMI	Underweight (Below 18.5)	23 (6.0)
	Normal weight (18.5-24.9)	104 (26.9)
	Overweight (25.0- 229.9)	182 (47.2)
	Obese (30 and above)	77 (19.9)
Duration of hypertension (years)	Less than 1 year	26 (6.7)
	1-5	173 (44.8)
	6-10	112 (29.0)
	More than 10 year	75 (19.4)
Self-reported Co- morbidities	Yes	200 (51.8)
	No	186 (48.2)
	If Yes, Diabetes mellitus	133 (65.5)
	Heart failure	60 (15.5)
	COPD	23 (6.0)
	Rheumatoid Arthritis	5 (1.3)
	Anemia	4 (1.1)
Family history of hypertension	Yes	196 (50.8)
	No	190 (49.2)

Table 3: Association between levels of self-care practice with socio-demographic variables

(n=386)

Parameters	Characteristics	Self-care practice		χ^2	
		Good Frequency (%)	Poor Frequency (%)	Value	P-value
Age in completed years	<40	15(46.9)	17(53.1)	1.152	0.562
	40-59	90(50.6)	88(49.4)		
	>60	79(44.9)	97(52.3)		
Sex	Male	99 (50.3)	98(49.7)	1.078	0.299
	Female	85(45.0)	104(55.0)		
Marital status	Currently married/ living with man /woman	165(48.1)	178(51.9)	0.235	0.628
	Single	19(44.2)	24(55.8)		
Religion	Hinduism	169(51.1)	162(48.9)	10.696	0.001
	Buddhist	12 (28.5)	30(71.4)		
	Christian	3 (42.8)	4 (57.1)		
	Muslim	2(33.3)	4(66.6)		
Ethnicity	Brahim/Chhetri	89(53.9)	76(46.1)	5.549	0.062
	Janjati	87(44.2)	111(55.8)		
	Dalit(kami, damai, sarki)	8(33.3)	15(66.7)		
Educational level	Illiterate/Non-formal	69(37.1)	117(62.9)	38.417	<0.01
	Primary level	29(38.2)	47(61.8)		
	Lower secondary	48(64.0)	27(36.0)		
	Higher secondary	21(70.0)	9(30.0)		
	Bachelor or above	17(89.5)	2(10.5)		
Area of residence	Rural municipality	45(34.4)	86(65.6)	14.098	<0.001
	Urban municipality	139(54.5)	116(45.5)		
Income (monthly)	≤15000	96(39.5)	147(60.5)	17.518	<0.01
	≥150001	88(61.5)	55(38.3)		

Chi squared χ^2 , p-value <0.05

There is significant association between level of self-care practice with religion ($p < 0.001$), educational level ($p < 0.001$), area of residence ($p = 0.001$) and income ($p < 0.001$) (Table 3).

There is no significant association between level of self-care practice with BMI, duration of hypertension, comorbidities and Family history of hypertension (Table 4).

Table 4: Association between levels of self-care practice with health-related variables (n=386)

Parameters	Characteristics	Self-care practice		χ^2	
		Good Frequency (%)	Poor Frequency (%)	Value	P-value
BMI	Underweight (Below 18.5)	6(26.1)	17 (73.9)	5.742	0.125
	Normal weight(18.5-24.9)	47(45.2)	57(54.8)		
	Overweight (25.0- 229.9)	90(49.5)	92(50.5)		
	Obese (30 and above)	41(53.2)	36(46.7)		
Duration of hypertension (in years)	Less than 1 year	10(38.5)	16(61.5)	2.565	0.464
	1-5	82(47.4)	91(52.6)		
	6-10	51(45.5)	61(54.5)		
	More than 10 year	41(54.7)	34(45.3)		
Self-reported Co- morbidities	Yes	98(49.0)	102(51.0)	0.295	0.587
	No	86(46.2)	100(53.8)		
Family history of hypertension	Yes	101(51.5)	95(48.5)	2.381	0.123
	No	83(43.7)	107(56.3)		

Chi squared χ^2 , p-value <0.05

Table 5: Association between Hypertension self-care practice and perceived social support

n=386

Perceived social support	Self-care practice		χ ²	
	Good Frequency (%)	Poor Frequency (%)	Value	P-value
Poor perceived social support	179 (46.3)	190(49.2)	10.259	0.001
Good perceived social support	15(3.8)	2 (0.5)		

Chi squared χ², p-value <0.05

There is a significant association between hypertension self-care and perceived social support (p= 0.001) (Table 5).

DISCUSSION

More than half of the participants (52.3%) in this study practiced poor self-care. This finding is in line with research undertaken in Dessie Town, Ethiopia (51%), and India (62.9%).

In this study, poor self-care practice was associated with the educational level (p=<0.01) of the participants. According to the Nepal Demographic and Health Survey 2016 analysis, nearly half of the participants (47.8%) have uncontrolled hypertension.^{19, 20}

The present study shows that age has no significant association (p=0.562) with the level of self-care practice. This finding is similar to the study conducted in Kathmandu, Nepal (p=0.19).²¹ This might be due to similar settings as Kavre and Kathmandu are the neighboring districts of province 3 with around 30km apart. Another study conducted in India contradicts with the present findings that age <60 years had favorable self-care practice.⁶ This could be due to the difference in study instruments used, number of study participants.

In this study sex is insignificant with the level of self-care practice. This is in line with the study conducted in Nepal and India shows similar findings.^{6, 21} This might be due to Nepal and India sharing special closeness, similarity and are so strongly interlinked by population distribution, demographic characteristics. Another study conducted in Saudi Arabia contradicts with the present finding.²² This variation could be due to socio-economic and socio-cultural differences between the countries.

The present study revealed that religion has significant association with the self-care practice. Among different religions, participants following Hinduism have good self-care practice. This finding is in contrast to the study conducted in Dessie town, Ethiopia, Bangladesh.^{11, 23} This might be due to socio-cultural variation and diversity in setting. As majority (80.6%) of the people in Nepal follow Hinduism whereas majority (89.5%) of people in Bangladesh follow Islam religion.²⁴

The present study revealed that educational level had significant association with self-care practice. The Participants with Bachelor or above educational level (89.5% had good self-care practice as compared to those who were illiterate (40.5%). This finding is consistent with other studies conducted in India, Saudi Arabia and Tigray Ethopia.^{6, 22, 25} Good educational status helps individuals to have good knowledge about hypertension and thus promotes participants' good self-care practices. These findings are in

agreement with other studies that demonstrated education as an essential prerequisite for self-care practices of a chronic disease.

Participants who live in urban areas had better self-care practice than those who live in rural areas. This finding is similar with the study conducted in Addis Ababa and Bangladesh.^{26, 23} This association could be due to more opportunities for more access to recommended diet, exposure to information about hypertension self-care through the mass media, books and internet in urban areas.

Also in this study income had significant association with self-care practice. This is inconsistent with the study conducted in Saudi Arabia and Tigray Ethopia.^{13, 25} This variation could be due to participants having low income could limit their accessibility and affordability of healthy foods as recommended, use of modern techniques, differences in educational background.

The present study shows that duration of hypertension had no significant association with the self-care practice. This finding is similar with the study conducted by Singur India.⁶ This might be due to population distribution, demographic characteristics of Nepal and India shows some similarity and connection.

The study revealed that there was no significant association between comorbidities and self-care practices. This is in line with the study conducted in Mangalore India (p= 026) and Bangladesh (p-0.44).^{23, 27} The present study shows no association between family history with self-care practice which is similar with the study conducted in Kathmandu Nepal.²¹

Participants who had good social support had good self-care practice as compared to participants who had poor social support. This finding was supported by studies conducted in China, Bangkok and Ethiopia.^{11, 28, 29} Possible reasons could be social support from family or friends in the form of emotional, educational, or financial support can assist individuals in coping with challenges and providing emotional wellbeing. Using standard valid tools is one of the strengths of the study. Convenient sampling techniques limited the generalizability of the findings and recall bias was expected to some extent.

CONCLUSION

The findings of the study revealed that half of the participants had poor self-care practice. There is significant association between hypertension self-care practice and religion, educational level, area of residence and income. Based on the results, the study concluded that good self-care practices and social support influence better self-care practice among hypertensive patients

which may eventually help to prevent complications in the coming future. Health care providers must increase patient's awareness in physical activities and diet for maintaining good self care practice.

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