Original Research Article

SELF-CARE PRACTICES IN ADULT HYPERTENSIVE PATIENTS AT A TERTIARY CARE HOSPITAL: A CROSS- SECTIONAL STUDY

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ABSTRACT

Background: Hypertension is the leading global health problem with overall prevalence in India is 29.8%, and in Maharashtra it is 25%. Studies have demonstrated that self-care practice is essential for blood pressure control and reduction of hypertension complications. Aim: To study the hypertension self-care practices and its determinants in adult hypertensive patient attending the tertiary care hospital.

Materials and Methods: In the present Cross-sectional study 320 hypertensive patients attending tertiary care hospital were enrolled and interviewed. Hypertension Self-Care Activity Level Effects (H-SCALE), was used to obtain data about self-care practices in hypertension.

Results: The mean age of patients was 59.09±10.51, with range from 35 to 86 years. About 66.87% patients had poor self-care practices toward hypertension. Results highlight significant variability in self-care practices among participants, particularly low adherence to dietary and physical activity guidelines, while medication adherence, alcohol cessation, and smoking cessation show more favourable practices. Poor self-care practices were significantly associated with religion, education, socio-economic status.

Conclusion: In terms of self-care practices, a considerable number of participants exhibited poor habits, underscoring the need for targeted interventions to enhance education, support, and self- management strategies.

Keywords: Blood pressure, Hypertension, Self-care practice, H-Scale.

INTRODUCTION

Hypertension or high blood pressure has become an important health problem. Currently, 1.5 billion people are affected with high blood pressure globally.[1,2] However, It is one of the three leading risk factors for global disease burden accounting for 7% of the global disability-adjusted life years (DALYs).[3] About 31.1% of the world adult population lives with hypertension, and 28.5% are in high-income countries while 31.5% are in low-and middle-income countries.[4] According to the World Health Organization's (WHO) report, complications of hypertension accounts for 9.4 million of the annual 17 million worldwide deaths from cardiovascular disease.[5]

Overall prevalence for hypertension in India is 29.8%. Estimated prevalence of hypertension in Maharashtra is nearly around 25%, it is higher amongst elder, cigarette smokers, alcohol consumers and obese persons.[6] Target of intervention should be to reduce hypertension, control blood pressure, improve quality of life by reducing complications and mortality. This is needed because the hypertension is responsible for approximately 45% of deaths resulting from heart disease and 51% of deaths from stroke. In addition, hypertension is a risk factor for renal and eye diseases.[7,8]

Hypertension self-care has been defined as "a dynamic and active process requiring knowledge, attitude, discipline, determination, commitment, self-regulation, empowerment and self-efficacy,[9] it

involves medication taking, consumption of low-sodium and low-fat diet, exercise, limiting alcohol drinking, not smoking, weight reduction, self-monitoring blood pressure, regular healthcare visit, and reducing stress. The use of a combination of diet rich in fruits, vegetables, and low-fat dairy products with reduced saturated and total fat lowers systolic blood pressure by 5.5 mmHg and diastolic blood pressure by 3 mmHg.[9] Self-care practices have been an important and cost-effective tool in the management and prevention of hypertension and its complications.

Hypertension Self-care management empowers the patient to lower the blood pressure and lower the risk of long term health complications. In order to achieve optimal BP control, it is desirable to identify the major roadblocks for hypertension Self-care by patients and target them with comprehensive health system approaches.

The present study was undertaken to assess hypertension self-care practices along with its determinants and its impact on BP control among adult individuals with hypertension.

MATERIALS AND METHODS

A cross-sectional study was conducted at a government medical college hospital, Miraj in Western Maharashtra region of India from June 2022 to May 2024. The study population were all adult patients diagnosed with hypertension for at least six months and were aged 18 years and older who visited the hospital's OPD and IPD during the study period. Critically sick having serious mental or cognitive impairment and Patients not willing to give consent were excluded.

The sample size was calculated using the highest prevalence of self-care found in the study by Chaco S conducted in Kerala.[10] Thus considering the prevalence of self-care 54.8%, relative allowable error 10%. Using the formula N = Z α2 p x q/ d2. The estimated sample size was 320. Based on the records available, there are 2-3 daily admissions of hypertensive patients and minimum 3-4 hypertensive patients attend the OPD. So, on weekly basis around 10-15 patients were recruited for the study.

The data was collected as exit interview for the OPD patients near Medicine OPD and for IPD patients – data was collected when the patient was stabilized. All care was taken to ensure privacy and confidentiality. The data was collected by interview method by the researcher. After explaining the purpose and nature of the study to the patient.

Information collected from the patient included Demographic information like age; sex; marital status; religion; educational level; occupation; economic status/monthly income; location of residency; number of family members etc. Health-related information like height, body weight, blood pressure, time since diagnosis, previous medical history, Routine Health seeking behaviour etc.

Hypertensive self-care activity level effect (H-SCALE) was used to assessed self-care activities, it contains six domains (subscales) of self-care practice activities (medication adherence, weight management, physical activity, smoking, alcohol intake, and low salt diet). Responses computed from six domains (subscales) were summed (range: 0–6). The self-care practice was considered as good when the patients positively adhered to four or more domains (subscales) out of six domains of self-care practice and poor unless otherwise.[3,10,11,12]

Data analysis was done using Microsoft excel and SPSS (Free trial version) and with help of statistical websites. For descriptive data, frequencies & proportions were calculated, and appropriate statistical tests were applied. The mean scores were calculated for various scales.

Ethical clearance was obtained from institutional ethical committee (Vide Letter No. GMCM/IEC/C11/2022, Dated - 06/10/2022).

RESULTS

The mean age of the 320 patients was 59.09±10.51, range being 35 to 86 years. Most of the patients were male (56.87%). Among the patients, 169 (52.81%) were from the urban areas. 157 (49.06%), were Hindu, followed by Muslim 110 (34.37%), Christian patients were 37 (11.56%), while the remaining 16 (5.0%) belong to other religions, including Sikh, Jain, and Buddhist. 270 (84.37%) participants were married. A smaller proportion includes widowed patients accounting for 39 (12.18%). Those who were divorced or single represent 5 (1.56%) of the patients, while 6 (1.87%) were unmarried. 86 (26.87%) participants have completed primary school followed by 68 (21.25%) who have completed secondary school, and 59 (18.43%) who have reached higher secondary education. Moreover, 46 (14.37%) of the patients have completed graduation, while 8 (2.5%) have attained post-graduation. 53 (16.56%) patients were illiterate. 105 (32.81%) participants were housewives followed by 61 (19.06%) were either self-employed. 54 (16.87%) participants retired, while 50 (15.62%) participants hold jobs in formal employment. Additionally, 34 (10.62%) participants were unemployed, and 16 (5.0%) participants work on daily wages. Among the participants, 22 (6.87%) belong to Socioeconomic Class I, 70 (21.87%) to Class II, and 121 (37.81%) to Class III. 50 participants (15.62%) are classified in Socioeconomic Class IV, and 57 (17.81%) belong to Class V.

Table 1: Clinical Profile of the study participants (n=320)

Variables	Category	Frequency	Percentage
BP control status	Controlled	102	31.87

	Uncontrolled	218	68.12
Duration since diagnosis	< 5 years	143	44.68
	> 5 years	177	55.31
Chronic disease comorbidities	Yes	163	50.94
	No	157	49.06
Family history of HTN	Yes	107	33.43
	No	213	66.56
BMI	Underweight (< 18.5)	05	01.56
	Normal (18.5 – 24.9)	161	50.31
	Over Weight (25 – 29.9)	138	43.12
	Obese > 30	16	05.00

Out of 320 participants, 102 (31.87%) patients have systolic blood pressure within the normal range. 107 (33.43%) participants were in the mild range (140-159 mm Hg), 82 (25.62%) participants were in the range of between 160-179 mm Hg and 29 (9.06%) participants were equal or more than 180 mm Hg. The majority of patients (53.12%), visit their physician on a monthly basis. Most of the patients (62.81%) check their blood pressure once a month, indicating a maximum adherence to regular monitoring.
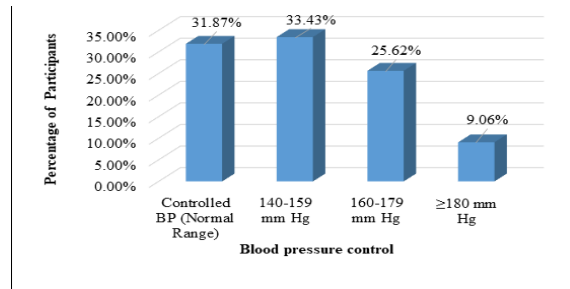
Figure 1: Level of Blood pressure control among the study participants

Table 2: Overall and comparative Levels of self-care practices among the study participants

Parameters		Frequency	Percentage
Overall self-care practice	Good practice	106	33.12
	Poor practice	214	66.87
Medication adherence	Adherence	169	52.81
	Non- adherence	151	47.19
Low salt diet	Adherence	63	19.69
	Non- adherence	257	80.31
Physical activity	Adequate	106	33.12
	Inadequate	214	66.87
Smoking status	Non-smoker	233	72.81
	Smoker	87	27.19
Weight Management practices	Good	79	24.69
	Inadequate	241	75.31
Alcohol abstinence	Non-drinkers	251	78.44
	Drinkers	69	21.56

In this study 66.87 % participants had poor self-care practices (66.87%). The study found that the maximum adherence was observed in alcohol abstinence (78.44%) and smoking status (72.81%), followed by medication adherence at 52.81%. However, adherence to a low salt diet was notably low, with only 19.69% of patients complying with dietary recommendations. Adherence of physical activity was inadequate in 66.87% participants.

Table 3: Various Self-care practices associated with the blood pressure control in study subjects (N=320)

Variables		Total N=320	Controlled (n=102)	Uncontrolled (n=218)	Chi Square (Degrees of freedom) P value
Medication Adherence	Adherers	169	70	99	$\chi 2$=15.02 (df=1)
	Non- adherers	151	32	119	0.0001*
Low Salt Diet	Adherers	63	22	41	$\chi 2$=0.335 (df=1)
	Non- adherers	257	80	177	0.562
Physical Activity	Adherers	120	45	75	$\chi 2$=2.79 (df=1)
	Non- adherers	200	57	143	0.094
Smoking Status	Adherers	233	79	154	$\chi 2$=1.627 (df=1)
	Non- adherers	87	23	64	0.202
Weight Management	Following	79	33	46	$\chi 2$=4.73 (df=1)
	Non-following	241	69	172	0.029*
Alcohol Abstinence	Adherers	251	89	162	$\chi 2$=6.88 (df=1)
	Non- adherers	69	13	56	0.0087*

Table 4: Various determinants associated with Poor self-care practices in study participants

Variables		Self-care practices		Odd's Ratio	95% CI	p-value
		Poor(n=214)	Good (n=106)			
Age group	<40	08 (3.73%)	05 (4.71%)	1.00	1.00	

(in years)	41 to 60	112 (52.33%)	62 (58.49%)	1.12	(0.34-3.6)	0.418
	>60	94 (43.92%)	39 (36.79%)	1.50	(0.46-4.83)	0.247
Sex	Male	118 (55.14%)	64 (60.37%)	0.80	(0.50-1.29)	0.186
	Female	96 (44.85%)	42 (39.62%)	1.00	1.00	
Area of residence	Urban	112 (52.33%)	57 (53.77%)	1.00	1.00	
	Rural	102 (47.66%)	49 (46.22%)	1.05	(0.66-1.68)	0.404
Religion	Hindu	117 (54.67%)	40 (37.73%)	1.00	1.00	
	Muslim	73 (34.11%)	37 (34.90%)	0.67	(0.39-1.51)	0.074
	Christian	17 (7.94%)	20 (18.86%)	0.29	(0.13-0.60)	0.0005*
	Others	07 (3.275)	09 (8.49%)	0.265	(0.09-0.76)	0.0067*
Marital status	Married	180 (84.11%)	90 (84.90%)	1.00	1.00	
	Divorced	02 (0.93%)	03 (2.83%)	0.33	(0.05-2.03)	0.116
	Unmarried	03 (1.40%)	03 (2.83%)	0.50	(0.09-2.52)	0.200
	Widowed	29 (13.55%)	10 (9.43%)	1.45	(0.67-3.10)	0.169
Education	Illiterate	42 (19.62%)	11 (10.37%)	3.37	(1.57-7.21)	0.0008*
	School level	112 (52.33%)	42 (39.62%)	2.35	(1.41-3.93)	0.0005*
	College and above	60 (28.03%)	53 (50.0%)	1.00	1.00	
Occupation	Job/ Formal employment	34 (15.88%)	16 (15.09%)	1.00	1.00	
	Self- employed	51 (23.83%)	26 (24.52%)	0.923	(0.43-1.97)	0.418
	Retired/ Unemployed/ Homemaker	129 (60.28%)	64 (60.37%)	0.948	(0.48-1.84)	0.438
Socioeconomic class	I & II	46 (21.5%)	46 (43.4%)	1.00	1.00	
	III	83 (38.78%)	38 (35.85%)	2.18	(1.24-3.82)	0.0031*
	IV & V	85 (39.72%)	22 (20.75%)	3.86	(2.07-7.19)	0.00001*
Comorbidities	Yes	90 (42.05%)	73 (68.86%)	0.328	(0.2-0.53)	0.000005*
	No	124 (57.94%)	33 (31.13%)	1.00	1.00	
Family history of HTN	Present	60 (28.03%)	47 (44.33%)	0.489	(0.30-0.79)	0.0019*
	Absent	154 (71.96%)	59 (55.66%)	1.00	1.00	
Frequency of follow up	Weekly, monthly	110 (51.40%)	73 (68.86%)	1.00	1.00	
	Other	104 (48.59%)	33 (31.13%)	2.09	(1.28-3.41)	0.0016*
Duration since diagnosis	<1 year	19 (8.87%)	10 (9.43%)	1.00	1.00	
	1 to 5 years	187 (87.38%)	64 (60.37%)	1.53	(0.68-3.48)	0.150
	>5 years	08 (3.73%)	32 (30.18%)	0.131	(0.04-0.39)	0.0001*
BMI	Underweight	03 (1.40%)	02 (1.88%)	0.891	(0.14-5.48)	0.450
	Normal	101 (47.19%)	60 (56.60%)	1.00	1.00	
	Overweight	110 (51.40%)	44 (41.50%)	1.485	(0.92-2.38)	0.050*

DISCUSSION

Hypertension, a prevalent and multifaceted health condition, poses significant challenges to individuals and healthcare systems globally. Effective management of hypertension largely depends on the implementation of self-care practices, which include lifestyle modifications, adherence to medication, and regular monitoring of blood pressure. These practices are critical in controlling blood pressure levels, preventing complications, and improving overall health outcomes.

Despite the known benefits of self-care, many hypertensive patients struggle with consistent and effective self-management. This disparity highlights the importance of understanding the determinants influencing self-care practices among adult hypertensive patients. Determinants can be broadly categorized into individual, socio-economic, and systemic factors, all of which may impact a patient's ability to manage their condition effectively.

In the present study, 31.87% of patients had controlled blood pressure (BP), while 68.12% had uncontrolled BP. This distribution reflects a significant challenge in hypertension management and is consistent with findings from previous research by Bommishetty VS et al where they reported BP level at time of interview- as follows: 39 patients (54.9%) had controlled BP, while 32 patients (45.1%) had uncontrolled BP.[13] However,

Sivakumar et al. found that only 33% of hypertensive patients achieved adequate BP control,[14] similar to our study's control rate of 31.87%. In contrast, a study by Choi HY et al. reported a slightly higher rate of controlled BP, with 40% of patients achieving their BP targets.[15]

The present study reported 52.81% adherence to prescribed hypertension medications, which is comparable to findings by Hussen et al. (57.5%) and Warren-Findlow J et al. (58.6%),[16,17] suggesting that medication adherence in hypertensive patients tends to hover around the 50–60% range in different settings. However, Abdulwahed A et al found a lower adherence rate of 40.4%, indicating regional variations and possibly differing healthcare access or patient education levels.[18] Sivakumar et al., by contrast, reported higher adherence (79.8%), which may be attributed to targeted interventions that improved patient compliance, a point that could be explored in future interventions to boost adherence in our population.[14]

The adherence to a low-salt diet in our study (19.69%) was alarmingly low, indicating the need for dietary interventions, and was notably lower than in most comparative studies by Hussen et al. (54.2%), Abdulwahed A et al. (29.5%), and Sivakumar et al. (71.4%).[14,16,18] This poor dietary adherence suggests cultural or socioeconomic barriers in adopting dietary changes. Educating patients on the importance of low-salt intake, increasing awareness about the contents of the food

items perhaps with tailored community-based programs, may help improve these numbers.

Physical activity adherence was also inadequate, with only 33.12% of participants meeting recommended activity levels. This is consistent with other studies conducted by Hussen et al. (31%) and Abdisa et al. (29.6%), indicating that inadequate physical activity is a widespread issue in hypertensive populations.[16,19] However, our results contrast with Abdulwahed A et al. (76.7%), where a larger proportion adhered to physical activity guidelines. This disparity might be explained by differing access to exercise facilities, cultural attitudes towards physical activity, or the presence of community health initiatives in other regions.[18]

Smoking rates in current study (27.19%) were relatively high compared to studies such as Abdulwahed A et al. (2.8%) and Warren-Findlow J et al. (25.3% non-smoking adherence). This suggests a more significant smoking problem in our patient population, necessitating stronger anti-smoking campaigns.[17,18] In contrast, Sivakumar et al. (93.3%) and Abdisa et al. (85.8%) reported far better adherence to non-smoking behaviours, possibly due to stricter public health measures and education in these regions.[14]

Practices for Weight management were also low in our study (24.69%), falling short compared to Abdisa et al. (50.2%) and Sivakumar et al. (80.7%), underscoring the need for awareness about weight management in the hypertensive patients.[14,19] Lastly, the majority of our participants abstained from alcohol (78.44%), a figure similar to those in studies like Abdisa et al. (73%) and Hussen et al. (79.8%).[16,19] The study done by Jamadar DM et al. shows medication adherence in 71.7%, Adherence to DASH diet was very poor 6.3%, Physical activity adherence was 48.7%, 9.3% subjects were smoker, Alcohol abstinence was 85.7%, Adherence to weight management practices was seen among 16.3%.[21]

Thus, our findings reflect a significant gap in adherence to hypertension self-care behaviours, particularly in dietary adherence, physical activity, and weight management. This highlights the need for targeted interventions, patient education, and public health policies aimed at improving self-care behaviours among hypertensive patients.

Overall, in the present study, the majority of participants (66.87%) had poor self-care practices, with only 33.12% demonstrating good self-care behaviours. This finding is consistent with other studies done by Abdulwahed A et al reported that 55.3% of participants had poor self-care practices, while 44.7% adhered to good self-care practices.[18] The slightly better adherence observed in Abdulwahed A et al.'s study could be attributed to region-specific healthcare interventions, such as better access to patient education and support systems that emphasize the importance of self-care in managing hypertension.[18] Conversely, our findings align more closely with those of Hussen et al., who reported that 70.1% of their study population had poor self-care practices, while only 29.9% adhered to recommended self-care behaviours.[16] This suggests that, like in our study, a significant portion of hypertensive patients face challenges in adhering to self-care behaviors. Factors such as lack of awareness, socio-economic barriers, and insufficient healthcare support may contribute to this trend.

The current study participants aged over 60 years exhibited better self-care practices compared to younger participants, although the association was not statistically significant. Similarly, Abdisa et al,[19] also found that older age groups (>60 years) had better self-care practices, although this association was not statistically significant. However, the findings contrast slightly with Melaku et al, who reported that older age groups had significantly better self-care practices.[20] Males in our study demonstrated better self-care practices than females, consistent with findings from Hussen FM et al.[16] In present study, where Christians and those in the "Others" category were significantly more likely to engage in good self-care than Hindus. This result contrasts with Melaku et al, who did not find significant differences based on religion.[20] Illiterate participants showing significantly poorer self-care practices compared to those with higher education. This is consistent with the findings from Hussen FM et al, which also highlighted education as a critical factor in self-care.[16] Similarly, socioeconomic status was a significant predictor of self-care in both our study and Abdisa et al.[19] However, the presence of comorbidities in present study was significantly associated with better self-care practices, a finding similar to study by Hussen FM et al.[16]

Similarly, socioeconomic status was a significant predictor of self-care in both our study and Abdisa et al, with participants from lower socioeconomic classes demonstrating poorer self-care.[19] This correlation underscores the role of economic constraints in accessing healthcare resources and maintaining self-care behaviours. However, the presence of comorbidities in present study was significantly associated with better self-care practices, a finding similar to study by Hussen FM et al.[16]

CONCLUSION

The findings from the present study provide a comprehensive overview of the socio-demographic characteristics, health-related information, health-seeking behaviour, self-care practices related to hypertension among the participants. Factors influencing self-care practices included education level, family history of hypertension, medication adherence. In terms of self-care practices, a considerable number of participants exhibited poor habits, underscoring the need for targeted

interventions to enhance education, support, and self-management strategies. A person with family history of hypertension, who has comorbidities and was diagnosed more than 5 years ago was found to be more likely to follow good self-care practices. While a person with low education level, from lower socio-economic strata, with irregular follow-up, and overweight were found to be more likely to follow poorer self-care practices.

Overall, these findings highlight the complexity of managing hypertension in this demographic and the necessity for holistic approaches that encompass education, family and community support, and individualized care plans to improve health outcomes.

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