

ORIGINAL ARTICLE**Knowledge, Attitude and Self-Care Practice towards Control of Hypertension among Hypertensive Patients on Follow-up at St. Paul's Hospital, Addis Ababa****Dawit Bacha^{1*}, Hailu Abera¹****OPEN ACCESS**

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ABSTRACT

BACKGROUND: Hypertension is the number one cardiovascular risk factor and the leading cause of mortality worldwide. It's the driver of the cardiovascular disease epidemic in Africa where it is a major, independent risk factor for heart failure, stroke and renal failure. There is no study to assess the level of knowledge of hypertension among hypertensive patients in our setup. The objective of this study was to assess knowledge, attitude and self-care practice towards control of hypertension among hypertensive patients on follow up at our hospital.

METHODS: A total of 385 hypertensive patients who were on follow up at our hospital were randomly selected for interview. The Sociodemographic and relevant clinical data were extracted using a structured questionnaire. Operational definitions and Likert scale was used to compare the variables.

RESULTS: Only 48.6% of hypertensive patients participated in this study have good basic knowledge of hypertension, 47.8% of them have good attitude and only 39.5% of the study participants have good practice towards control of hypertension. Male sex, formal education and being urban resident are associated with better knowledge, attitude and self-care practice of hypertensive patients at our hospital.

Conclusion:

The result states that there is an inadequate knowledge about hypertension; as well attitude and self-care practice towards control of hypertension among our hypertensive patients is generally poor. Responsible bodies should focus on addressing such limitations of hypertensive patients. Attention should be given to hypertensive patients who are females, low educational level and those coming from rural.

KEYWORDS:knowledge, attitude, hypertension, hypertensive heart disease, awareness

INTRODUCTION

Cardiovascular disease is the leading cause of death in developing countries where it causes nearly as many deaths as HIV, malaria and tuberculosis (1,2). Hypertension is the number one cardiovascular risk factor and the leading cause of mortality worldwide (3). Hypertension is the driver of the cardiovascular disease epidemic in Africa where it is a major, independent risk factor for heart failure, stroke and kidney failure (4). Abundant evidence from randomized controlled trials has shown benefit of antihypertensive drug treatment in reducing important health outcomes in persons with hypertension (5-7). The treatment of hypertension primarily depends on the level of understanding of the patient, the perception an individual has towards hypertension and the magnitude of associated co-morbidities.

According to the Eighth Joint National Committee (JNC 8) on the management of hypertension in adults, hypertension is defined as persistent systolic blood pressure level of 140 mm Hg or diastolic blood pressure of 90 mm Hg(8). Hypertension is generally classified as primary and secondary on the base of its cause. Primary or essential hypertension is defined when there is no identified cause. The majority, (95%), of hypertensive patients fall in this category globally(9). A variety of risk factors have been associated with primary hypertension(10). Secondary hypertension is a type of hypertension with an undelying, potentially correctable cause and it contributes to about 5% of all hypertensive patients (11). Hypertension is associated with a number of serious adverse health effects. The risk begins as the blood pressure rises above 115/75 mmHg in all age groups (12-13).

One of the global non-communicable disease targets adopted by the World Health Assembly in 2013 is to lower the prevalence of hypertension by 25% from its 2010 level by 2025 (14). Hypertension has become a significant problem in many developing countries experiencing epidemiological transition from communicable to non-communicable chronic diseases (15–17). The emergence of hypertension and other cardiovascular diseases as a public health problem in these countries is strongly related to aging of

the populations, urbanization, and socioeconomic changes favoring sedentary habits, obesity, alcohol consumption, and salt intake among others (18,19).The global increase in the number of adults with hypertension is a net effect of increase due to population growth and ageing, and decrease due to declining age-specific prevalence (20).

In Ethiopia, even though there are few nationwide studies to evaluate the magnitude of hypertension, there are regional studies with different prevalence rates. The Ethiopian steps survey on risk factors and prevalence of chronic non-communicable disease done in 2015 revealed the national prevalence of hypertension to be 15.6% (21)

According to a meta-analysis done in 2015, the prevalence of hypertension among Ethiopian populations was estimated to be 19.6%. This study also revealed that prevalence of hypertension is 23.7% among urban residents and fairly equal between both genders, being 20.6% in males and 19.2% in females (22).

Another systematic review revealed that the prevalence of hypertension varies from the highest rate of 31.5% in males to the lowest rate of 0.8% in females (23). The prevalence of hypertension in rural areas of Ethiopia was evaluated at different times; one of such investigations done in Bedelle Town, southwest Ethiopia, revealed the prevalence of hypertension to be 16.9% and showed that the awareness of the disease in the same community was low;only 44.8% of them were aware of their status and only 22.4% controlled hypertension (24).

An institution based study done on Hawassa University workers revealed a prevalence of 19.7%. This study also looked into knowledge of hypertension and factors affecting knowledge of hypertension where age, educational level, occupation and monthly income of the participants were significantly associated with better knowledge (25).Self-care practice towards control of hypertension among hypertensive patients has not been studied in our country.

MATERIALS AND METHODS

This study was conducted from January 1st 2018–March 30, 2018 at St. Paul's Hospital Department of Internal Medicine, Cardiology Outpatient Clinic

on hypertensive patients on follow-up. The hospital is the second largest public hospital in Ethiopia, which was built in 1961. The hospital has all major departments with an estimated 1500 staff to provide care to about 250,000 people each year and an estimated catchment population of more than 5 million (26).

This is a hospital based cross sectional study intended to assess the knowledge, attitude and self-care practice towards control of hypertension among hypertensive patients on follow-up at our hospital during the specified study period. The selected hypertensive patients' socio-demographic characters, knowledge, attitude and self-care practices towards control of hypertension were assessed by using pretested structured questioner.

All of the questionnaire were filled by face-to-face interview with trained data collectors. The questionnaire was divided into four main parts. The first part deals with socio-demographic profiles, co-morbidities and associated factors. The second part was meant to assess basic knowledge of hypertension. For each question in this category, score of one (1) for correct response and score of zero (0) for wrong and 'I don't know' responses were given. At the end, each participant was labeled as having good knowledge of hypertension if he or she scored greater than 4 of 6 ($>66.7\%$).

The third part of the questionnaire deals with attitude of the participants towards hypertension in terms of control and management. It has five questions for which a score of one (1) for each correct response and score of zero (0) for each wrong and 'I don't know' responses. Accordingly, participants' attitude towards control of hypertension was labeled good if he or she scored more than 3 out of 5 or $>60\%$.

The last part deals with self-care practice of hypertensive participants concerning control of hypertension. It also involves how the participants adhere to their treatment and actions they take in controlling associated factors. Based on the above operational definition, practice towards control of hypertension is considered to be good practice if an individual has a score of greater than 3 out of 5 or $>60\%$.

Ethical clearance was obtained from institutional ethical review board. Written consent was obtained from each participant before the interview.

Sample size and sampling technique: Sample size was determined using the single population proportion formula considering the infinite size of the population, 50% for the unknown prevalence of hypertensive patients with good knowledge, attitude and self-care practice, 5% margin of error and 95% confidence interval with estimated nonresponse rate of 5% making the sample size to be 403. Systematic random sampling technique based on the estimated number of hypertensive patients visiting the clinic was used to select the participants.

RESULTS

Socio-demographic characteristics and comorbidities: Of the sampled 403 participants, 385 were selected making the response rate to be 95.5%. The mean age of the participants was 57.6 years with the range of 17-85 (SD of 11.9) out of which 54.5% of them were males. Regarding educational level, 25.2% (n=97) of the participants had no formal education while 111(28.8%) attended college or university as their highest level of educational (Figure 1; Table 1).

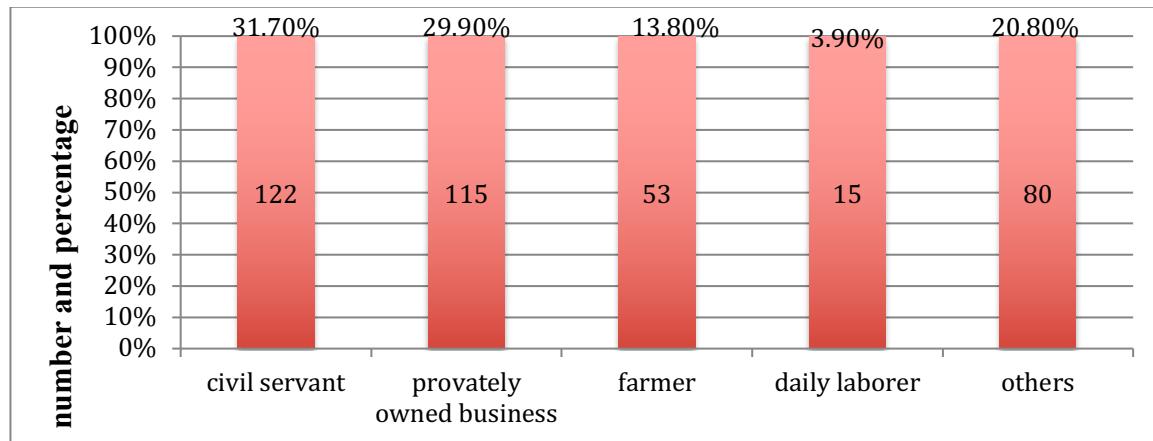


Figure 1: Bar graph showing occupational status of participants

Table 1: Sociodemographic charters of participants

Variables	Frequency	Percentage
Age groups (years)	16 – 25	1
	26 – 35	10
	36 – 45	48
	46-55	111
	56 – 65	121
	66 – 75	69
	76 – 85	25
	Total	385
Gender	Total	100
	Male	54.5
Educational level	Female	45.5
	No formal education	97
	Completed grades 1-8	134
	Completed high school	43
	College/university	111
Address	Total	100.0
	Urban	265
	Rural	120
Occupation	Total	100.0
	Civil servant	31.7
	Privately owned business	29.9
	Daily laborer	3.9
	Farmer	13.8
	Others	20.8
Duration of hypertension (years)		
1 – 5	253	65.7
	6-10	100
	11-15	20
	16-20	7
	21-25	2
	26-30	3
	Total	385
100		

BMI was determined for only 282 participants and ranged from 18.7- 48 kg/m² of body surface area

making 118 participants (41.8%) obese or overweight. Only 50% of the study participants

had identifiable risk factor for hypertension. Of all participants, 17.7% drink alcohol, 11.4% had

family history of hypertension and 3.6% were current smokers (see table 2).

Table 2: Risk factors identified among hypertensive patients on follow up at St. Paul's hospital from, January 1st 2018 -March 30, 2018.

Risk factors identified	Frequency(n)	Percept
Current smoker	14	3.6
Excessive alcohol consumption	70	18.2
Family history of hypertension	44	11.4
Diabetes Mellitus	54	14.1
Kidney disease	19	4.9
Two or more risk factors identified	17	4.4
No risks identified	193	50.1
Total	385	100

Knowledge of hypertension: In this study, only 86(22.3%) of the participants gave complete right response to knowledge questions, and only 26.2% (101) of them gave 5 out of 6 correct responses. This indicates, only 187(48.6%) of participants had good basic knowledge of hypertension.

In this study, multiple variables were found to affect knowledge of hypertension. Males were found to have 2.5 times higher knowledge about hypertension compared to females participants. Age was also another variable affecting participants' knowledge about hypertension. The age group of between 36-45 years had 3.6 times

higher knowledge compared to age group of 76-85 years (6.3-19.8 at 95% ci, SE of 0.29). Level of educational status was directly related to knowledge of hypertension among participants; participants with primary education had 4.3 times higher knowledge; those who completed high school had about 12 times higher knowledge and those who attended college/university had about 16 times higher knowledge compared to those with no formal education. Self-identified urban residents had 11 times higher knowledge compared to rural residents (Table 3).

Table 3: Association of independent variables with knowledge of hypertension of hypertensive patients at St. Paul's hospital, Addis Ababa. January 2018-March 2018.

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	-.003	.012	.054	1	.816	.997	.975	1.020
Sex (male)	.467	.269	3.018	1	.082	1.595	.942	2.701
Address (urban)	2.007	.318	39.887	1	.000	7.440	3.991	13.870
Educational status			21.179	3	.000			
Educational status(primary education)	.789	.374	4.444	1	.035	2.202	1.057	4.587
Educational status(high school)	1.417	.489	8.381	1	.004	4.125	1.580	10.764
Educational status(college/university)	1.872	.435	18.526	1	.000	6.503	2.772	15.252
Constant	-2.621	.786	11.125	1	.001	.073		

In multivariable analysis, urban residence was found to have 7.4 times higher odds of having good knowledge about hypertension compared to

rural residence, after adjusting for age, sex and educational status. Similarly, the odds of having good knowledge increased with educational status

after adjusting for all other variables, but multiple regression analysis did not show age and sex to be associated with knowledge status of the participants (Table 3).

Attitude towards control of hypertension: In the attitude part of the study, only 31(8.1%) of the participants gave correct response to all attitude questions indicating that only 184(47.8%) of the participants to have good attitude about control of hypertension (Table 4). The attitude of participants towards control of hypertension was exceptionally good for salt restriction as correctly responded by 354(91.9%). Only 166(43%) of participants thought that excessive alcohol intake worsens blood pressure level.

In univariate analysis, attitude towards control of hypertension is affected by gender making the odds of having good attitude towards control of hypertension two times higher than female participants (*p* value of 0.002.). Participants who were urban residents had 2.5 times higher odds of having good practice.

All variables, except age, were associated with attitude in the multivariable analysis. Male sex, urban residence and having formal education had twice higher odds of having good attitude of hypertension when adjusted for all other variables compared to female sex, rural residence and having no formal education, respectively. (see table 4).

Table 4: Association of variables to attitude of hypertensive patients at St. Paul's hospital, Addis Ababa, January 2018-March 2018.

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	-.019	.010	3.323	1	.068	.981	.961	1.001
Sex (male)	.771	.244	10.001	1	.002	2.163	1.341	3.489
Address (urban)	.899	.268	11.225	1	.001	2.458	1.452	4.160
Educational status			5.131	3	.162			
Educational status(primary education)	.727	.328	4.909	1	.027	2.070	1.088	3.939
Educational status(high school)	.704	.444	2.522	1	.112	2.023	.848	4.825
Educational status(college/university)	.559	.386	2.105	1	.147	1.750	.822	3.725
Constant	-.540	.688	.616	1	.433	.583		

Table 5: Association of variables with self-care practice of participants towards control of hypertension at St. Paul's hospital

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Age	.005	.011	.175	1	.676	1.005	.983	1.026
Sex (male)	.565	.254	4.941	1	.026	1.760	1.069	2.896
Address (urban)	1.151	.302	14.580	1	.000	3.163	1.751	5.711
Educational status			16.128	3	.001			
Educational status(primary education)	.512	.372	1.896	1	.169	1.669	.805	3.461
Educational status(high school)	1.454	.473	9.464	1	.002	4.281	1.695	10.814
Educational status(college/university)	1.357	.420	10.467	1	.001	3.886	1.708	8.845
Constant	-2.647	.755	12.285	1	.000	.071		

Self-care practice: In this study, only 31(8.1%) of the participants had correct response to all questions of this category. The only impressive response by the participants was about adherence to medication and regular follow-up for hypertension, which is correctly answered by 374 (97.1%). Overall, only 152(39.5%) of the study participants had good practice of control of hypertension.

As part of the self-care practice, the participants' last eye examination was assessed, and only 79(20.6%) of the patients had eye examination within the last one year. That is considered good practice according to our operational definition.

Like both knowledge and attitude, multiple variables were found to affect the practice of participants towards control of hypertension. Males had 1.76 times higher odds of having good practice compared to females (*p*-value 0.02). Being urban resident was associated with a 3 times higher odds of having good practice compared to rural residence. Educational status was another variable found to affect self-care of hypertensive participants.

In univariate analysis, participants who completed high school had 4 times higher odds of having good practice and those who attended college/university had 3.8 times higher odds of having good practice compared to those with no formal education. There was no significant difference between participants with no formal education and who attended primary school in terms of their attitude towards hypertension.

In multivariable logistic regression, males had about twice odds of performing good practice compared to females [AOR: (95%CI) = 1.76 (1.07, 2.90)]. Urban residents had three times higher odds of good practice compared to rural residents [AOR: (95%CI) = 3.20 (1.80, 5.71)]. The odds of good practice also increased with educational level; those with no formal education had a poor hypertension control practice (Table 5).

DISCUSSION

This hospital based cross sectional study was intended to assess knowledge, attitude and self-care practice among hypertensive patients on follow-up. Accordingly, the overall basic knowledge about hypertension of hypertensive patients in our hospital was low; less than 50% of the participants had good knowledge. The knowledge of hypertensive patients about their disease varies from country to country and from region to region of the same country. Previous studies showed conflicting reports about knowledge of hypertension among hypertensive patients. One of such was in Karachi, Pakistan, which showed that 81.1% of study participants did not know hypertension (27).

In another review done in the United States, it was found that 81.0% of the participants knew the definition of hypertension, but 35% of them did not consider high BP as a serious health concern while over 35% believed that high BP is unavoidable. In this study, the investigators were interested in patients' perception of BP levels as compared to actual BP as recorded in the medical record explored the relationship between patient self-report of BP levels and actual values recorded in the medical record at the last visit.

Forty-one percent of them did not know their BP values (28). In this study, the factor associated with better knowledge of hypertension was found to be educational level of the participants. Participants who completed high school reported better understanding of hypertension than patients without high school education (28).

In Ethiopia, there are few studies that tried to look into knowledge of hypertension among hypertensive patients. One of such studies, done in western part of the country, showed that only 44.2% of the hypertensive patients involved in that study were aware of their hypertensive status, and that only 22.4% of those on treatment had their blood pressure controlled (24). Even in regions of the world where there is better general knowledge of hypertension, patients lack comprehensive understanding. This has been noted in a review done on 1250 hypertensive patients in the United States where patients do not recognize the importance of elevated systolic blood pressure

levels or the current status of their blood pressure control (28). Similarly, in our study, age, sex, educational level, and address were strongly related with better knowledge of hypertension among hypertensive patients but not with duration of hypertension. Males were found to have 2.5 times higher knowledge compared to females who were involved in this study, and the age groups of between 36-45 years had 3.6 times higher knowledge compared to the age groups of 76-85 years. Educational status was directly related to knowledge of hypertension in this study.

Attitude of participants towards control of hypertension was poor in this study; only 47.8% of them had good attitude towards control of hypertension. This is also consistent with previous findings from many reports of hypertensive patients around the world. One of such reviews is from Nigeria where attitude towards control of hypertension was found to be very low. Less than 25% of the study participants had good attitude towards control of hypertension and other associated factors (29). A nationwide telephone survey done in Malaysia in the year 1999 also showed that the attitude of hypertensive patients towards control of hypertension either by using medication or non-pharmacologic approach was low (30).

In the self-care practice of hypertensive patients, drug adherence stands at far front in terms of controlling hypertension and hence possibly preventing long term complications related to hypertension. In our study, we found that self-care practice of study participants towards control of hypertension was low; only 39.5% of the participants had good self-care practice towards control of hypertension. Specifically, adherence to medications for hypertension and regular follow-up were found to be unexpectedly good (97% of participants have good regular follow up). Regular exercise as a practice of controlling hypertension was poor as reported to be practiced only by 46% of the participants.

In conclusion, this study revealed that hypertensive patients on follow-up at our hospital had poor basic knowledge about hypertension, poor attitude and self-care practice towards control of hypertension. We would like to recommend that

health professionals actively involved in the management of hypertensive patients need to understand the overall poor knowledge of hypertension among hypertensive patients in our setup. Special attention should be given to female gender, low educational level and those coming from rural areas in giving support on hypertension related knowledge and attitude towards hypertension. Works on awareness of hypertension and practice towards control of hypertension need to be advocated in our hospital. Thus, opportunity exists to focus on patient education programs and interventions on the cardiovascular risk associated with uncontrolled hypertension.

The strength of this study is that it is the first of its type to be conducted in our institution looking into the knowledge and attitude of hypertensive patients towards their disease. However, it has some limitations that might make generalization difficult. One of such limitations is that it was done in one institution only which is a referral center to which patients with difficulty to control or other comorbidities are referred; these might not represent all hypertensive patients.

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