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Original Article

Lifestyle Pattern and Hypertension Related Knowledge, Attitude and Practices among Diagnosed Patients of Hypertension Attending a Tertiary Care Hospital

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ABSTRACT

Context: Hypertension can be controlled by modifying lifestyle related risk factors and generating awareness about these risk factors among hypertensive patients. **Aim:** To assess the life style pattern, knowledge, attitude and practices related to hypertension among diagnosed patients of hypertension attending a tertiary care hospital. **Materials and methods:** Across sectional hospital based study was conducted in a tertiary care hospital during May and June 2014.102 diagnosed patients of hypertension attending the Medicine out-patient department were included in the study by convenience sampling. Apre-structured questionnaire was used and data related to demographic profile, history of hypertension, knowledge, attitude and practices regarding hypertension etc. were collected. Data were analysed using Statistical Package for the Social Sciences version 20. **Results:** Out of 102 participants, 55.9% were males and the mean age was 42.98 + 11.85. The mean systolic blood pressure and diastolic blood pressure was 146.01 + 10.59 and 103.7 + 10.76 respectively. 50% of the patients led a sedentary life & only 13.7% were practicing fitness activities daily. 22.5% were current smokers, 12.7% were passive smokers and 8.8% were currently taking alcohol. About 26.5% patients were not concerned about their increased BP, 5.9% didn't know any of the risk factors of hypertension &7.8% were unaware of the symptoms of hypertension. Logistic regression showed that occurrence of uncontrolled hypertension is reduced by 0.06 times in patients having satisfactory knowledge. **Conclusion:** Intervention in the form of lifestyle education during hospital visits will be helpful to increase the awareness about modifiable risk factors, controlling blood pressure and preventing complications among these patients.

Key words: Blood pressure, Body weight, Risk factors, Hypertension, Lifestyle.

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INTRODUCTION

Hypertension is one of the most common diseases affecting humans worldwide. In 2004, high blood pressure was identified in GLOBAL HEALTH RISKS report by WHO as the fifth ranked factor for disability-adjusted life years.[1] In 2010, high blood pressure was identified by Lim *et al* as the first ranked factor for disability-adjusted life years.[2] Uncontrolled hypertension results in various complications (e.g., coronary heart disease, stroke, congestive heart failure, renal insufficiency and peripheral vascular disease).[3] Hypertension has become a significant problem in many developing countries experiencing epidemiological transition from communicable to non-communicable chronic diseases.[4] Hypertension has also been attributed as one of the leading causes of death and disability in the developing countries.[5] The emergence of hypertension and other cardio vascular diseases as a public health problem in these countries is strongly related to the aging of the populations, urbanization, and socioeconomic changes favouring sedentary habits, obesity, alcohol consumption, and salt intake, among others.[6] Assessment of knowledge, attitudes, and practices (KAP) is a crucial element of hypertension control, but little information is available from developing countries where hypertension has lately been recognized as a major health problem.[7]

Hypertension and its complications can be controlled by modifying lifestyle related risk factors, and generating awareness about these risk factors among hypertensive patients. So this study was planned to assess the life style pattern, knowledge, attitude and practices related to hypertension among diagnosed patients of hypertension attending a tertiary care hospital.

METHODS

A Hospital based cross sectional study was conducted in IMS & SUM Hospital in a period of 2 months after clearance by institutional ethics committee.Patients with a diagnosis of hypertension were interviewed for the Hypertension related knowledge, attitude and practicesin the Medicine outpatient department of IMS & SUM Hospital. The patients with hypertension who attended the Medicine OPD during one and half months from 1st May 2014 to 15th June 2014 were included in the study. Diagnosed patients of hypertension were included in the study. The prospect of this study for increasing awareness was explained to the participants. Collection of data was done in a friendly atmosphere after obtaining informed consent.On an average, 6-7 respondents were interviewed per day and 6 days a week. Considering the time and feasibility of the study, about 250 subjects were planned to be included in the study (calculated through convenience sampling i.e. 6 weeks × 6 days × 6-7 subjects per day = 250). Patients registered on the day of interview and who had given consent to participate in the study were included. Diagnosed patients of hypertension were included in the study. Patients with H/O stroke or myocardial infarction were excluded.

The study subjects were interviewed using a predesigned, pretested and semi structured questionnaire. Data in respect of age, sex, education, years of schooling, residence, per capita monthly income, family size, co-morbidity, life style related factors, history of hypertension etc. were collected. The knowledge, attitude and practices regarding hypertension, source of knowledge etc. were collected. The knowledge regarding risk factors of hypertension was evaluated using 11 questions, each correct answer having a score of 1 and the tool was validated by experts in this field. Attitude and practices regarding control of hypertension were assessed. Recording of height, weight & blood pressure were done using calibrated instruments.

Data were entered in Microsoft excel and analyzed using SPSS software v.20. Frequencies were described as mean and standard deviation (for continuous variables), number and percentage (for categorical variables). Difference in means between two groups was measured using unpaired student's *t*-test. Association between continuous variables was evaluated using Pearson's correlation coefficient and Chi-square test was done to find association between categorical variables. Logistic regression model was used for predictors of hypertension. $^{*}p$-Value <0.05 was considered significant.

RESULTS

The age of hypertensive patients included in the study varied from 19 years to 82 years. The mean age was 42.98 ± 11.85 years. Out of 102 study subjects, 55.9% were males and 95.1% were Hindu. Most of the patients belonged to the general caste (46.1%) and other backward castes (44.1%). All the subjects were literates and more than 75% had secondary or higher level of education. By occupation majority were homemakers (34.3%) followed by teacher/clerk or similar service holders (20.6%), businessmen (17.7%) andstudents (3.9%).

Among the study population, 88.2% belonged to the upper social class, 8.8% belonged to middle and 2.9% belonged to low social class (Modified BG Prasad scale 2014 update).In the present study, 65% of study subjects belonged to nuclear families and 35% belonged to joint families. Majority (84.3%) were married and living with their spouses.

Duration of hypertension was more than 10 years in 55.9% patients, 5-10 years in 20.6% patients and 1-5 years in 20.6% patients and less than 1 year in 2.9% patients. The mean systolic blood pressure and diastolic blood pressure was 146.01 ± 10.59 and 103.7 ± 10.76 respectively. Blood pressure was found to be controlled in about 8% of the hypertensive patients by medicines, though 52% were irregular in taking medicines.

When the study subjects were assessed for overweight and obesity as per BMI, it was found that 37.3% patients were having BMI ≥ 25. The mean BMI was 24.46 ± 3.7.

Study of lifestyle related factors revealed that 50% of hypertensive patients were leading sedentary life & only 13.7% were practicing fitness activities daily. 86.3% were not practicing regular walking or any fitness activities. 78.4% were taking mixed diet, only 18.6% were taking fruits daily and 81.4% were not taking or occasionally taking fruits. About 41% of the study subjects never used tobacco in any form and 22.5% were current smokers. Alcohol consumption was found in 8.8% of the subjects and 12.7% were exposed to passive smoking either in work place or home. (Table 1).

When the study subjects were assessed for their knowledge regarding hypertension, 34.7% were not aware about normal blood pressure range, 53.9% patients did not know about systolic and diastolic blood pressure. 7.8% were unaware of the symptoms of hypertension (Figure 1). Awareness about risk factors of hypertension is very much essential for its prevention. Increased salt intake, obesity, stress/anxiety and family history of hypertension were the most commonly known risk factors among the study subjects (Figure 2). In our study, 5.9% didn't know any of the risk factors of hypertension.

Although suffering from hypertension, many of the patients lacked proper attitude to control their disease. About 26.5% patients were not concerned about their increased BP, 22% believed that hypertension is not a serious health issue and 31% opined that it can be controlled by medicine alone. Only 35% of patients were doing regular monthly blood pressure check-ups (Figure 3). The knowledge about risk factors of hypertension was assessed on an 11point scale. The mean score was 4.73 (95%CI; 4.32, 5.31). A score above 5 being considered to be satisfactory, only 35% of the patients had a satisfactory knowledge score. There was a negative relationship between risk factor score and systolic blood pressure with a correlation coefficient of r=-0.212($p<0.05$) i.e. as the risk factor knowledge score increased, the systolic BP decreased. The knowledge score showed a positive association with the socio-economic status (per-capita income) with a correlation coefficient of r=0.111, but it was not statistically significant.Considering blood pressure more than 140/90 mmHg among hypertensive patients as uncontrolled BP, there was significant association between unsatisfactory knowledge level and uncontrolled BP among hypertensive patients (x^2=10.36; p=0.001). Logistic regression showed that occurrence of uncontrolled hypertension is reduced by 0.06 times in patients having satisfactory knowledge (Table 2).

Linear regression model demonstrated that SBP increased by 0.321 times with each kg increase in weight (Table 3) and 0.89 times with rise in BMI and it was statistically significant ($p<0.001$) (Table 4).

DISCUSSION

Hypertension is a major health problem in India as in other countries. Various factors have been found to be responsible for causing hypertension but people are not well aware of these risk factors. In our study the most common risk factors known to the patients are increased salt intake (61.8%), obesity (58.8%), and family history of HTN (52%), lack of regular exercise (43%), tobacco (39.2%) and alcohol intake (28.4%). In a study conducted at Gulf Medical University Ajman, United Arab Emirates, the risk factors known to patients were stress (75.5%), high cholesterol (73.6%), obesity (73.6%), smoking (71.8%), increased salt intake (69.1%), high calorie diet (62.7%) & physical inactivity (47%).[8]The dif-

Table 1: Lifestyle factors among diagnosed patients of Hypertension

Factors	No. (Percentage)
Sedentary work	51 (50)
Mixed diet (nonveg.)	135 (78.4)
Not taking or occasionally taking fruits	132 (81.4)
No regular walking or fitness activities	117 (86.3)
Currently using tobacco	43 (22.5)
Consuming alcohol	15 (8.8)
Exposed to passive smoking	9 (12.7)

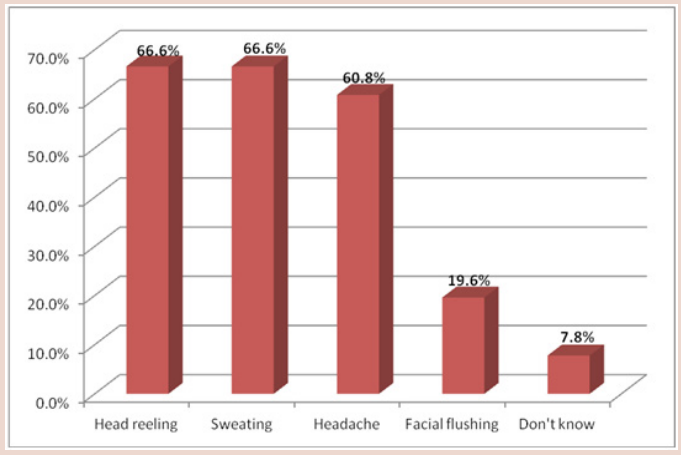

Figure 1: Knowledge of patients about symptoms of Hypertension.

Table 2: Logistic Regression Model – Hypertension status & Risk Factor Knowledge Level

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1a	Risk Factor KnowledgeLevel	-2.753	1.092	6.354	1	.012	.064	.007	.542
	Constant	6.927	2.059	11.321	1	.001	1019.828		

a. Variable(s) entered on step 1: RFScore Gr.

Table 3: Linear Regression Model – Systolic Blood Pressure (SBP) & Weight

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	125.123	5.283		23.682	.000	114.641	135.605
Weight	.321	.077	.384	4.162	.000	.168	.473

Dependent Variable: SBP

Table 4: Linear Regression Model – Systolic Blood Pressure (SBP) & Body Mass Index (BMI)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	125.173	5.056		24.759	.000	115.143	135.203
BMI	.887	.204	.398	4.343	.000	.482	1.293

Dependent Variable: SBP

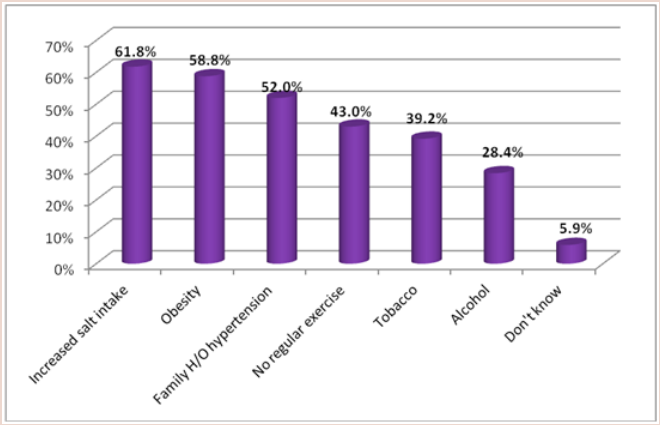

Figure 2: Knowledge of patients about risk factors of Hypertension.

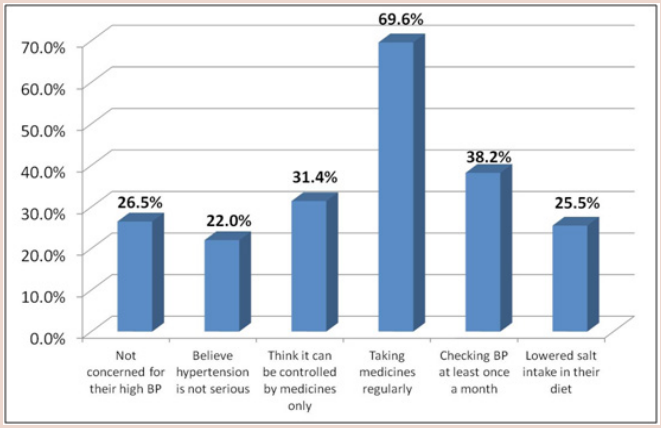

Figure 3: Attitude and practices among patients with hypertension.

ferences of results may be due to difference in study settings, difference in educational background of patients, lack of awareness programmes etc. So there is need for increasing awareness about the risk factors of hypertension to prevent and control hypertension.

In our study, assessment of knowledge of symptoms of hypertension revealed that the most common symptoms are dizziness/head reeling (66.6%), sweating (66.6%), headache (60.8%) and facial flushing (19.6%). 7.8% of patients had no knowledge about symptoms of HTN. In a cross-sectional study done in an urban slum in Mumbaisuch findings were dizziness (50.58%), headache (31.17%), palpitation (16.76%) and tiredness (12.35%).[9]

Studies conducted in different parts of India have shown correlation of smoking or tobacco use with hypertension.[10] A study from Mumbai showed that 13.23% of the patients were smokers,[9] whereas it was 9.46% & 2% in studies conducted in Dar es Salaam[11]and Ludhiana[12]respectively. In our study tobacco use in the form of smoking and chewing was found in 22.5% and 55% of the subjects respectively. This shows that there is an urgent need of behaviour change communication activities to decrease the tobacco use.

Alcohol plays a role in developing hypertension by different mechanisms like stimulation of sympathetic nervous system, direct pressure effect on vessel wall and production of adrenocorticoids In studies conducted at Mumbai, Dar es Salaam[11]& Ludhuana,[12] the prevalence of alcoholics

among hypertensive patients was found to be about 25%, 30% and 6% respectively. In our study, only 8.8% of the patients were found to be alcoholic. Physical activity profile found to differ across different studies. In the study done in Ludhiana,[12] 76% patients were leading a sedentary lifestyle, while it was found to be 50% in our study. Regular physical / fitness activity was not done by 86.3% of our study subjects, which was much higher than that reported (47.6%) in the study done at Dar es Salaam.[11]

Obese patients have poor control over hypertension. In the Framingham study[13] it was observed that there was 6.5 mm Hg rise in SBP with 10% increase in weight. Our study demonstrated that SBP increased by 0.321 times with each kg increase in weight. A study by Marilyn M. Schapira *et al* done in USA[14] did not find any significant association of knowledge scores with diastolic or systolic BP levels, but we found that hypertension status improved by 0.06 times with increase in knowledge level.

CONCLUSION

Intervention in the form of lifestyle education among hypertensive patients during hospital visits will be helpful to increase the awareness about modifiable risk factors. This will enable them to adopt and practise a healthy lifestyle, which will help in controlling the blood pressure and preventing hypertension related complication.

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CONFLICTS OF INTEREST

All authors declared no conflict of interest.

ABBREVIATION USED

SBP: Systolic Blood Pressure; **DBP:** Diastolic Blood Pressure; **BP:** Blood Pressure; **HTN:** Hypertension.

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