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ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE IN HYPERTENSIVE PATIENTS IN A TERTIARY CARE TEACHING HOSPITAL

M. Kumaraswamy, M. Samraksha, M. N. Meghana* and S. K. Sandeep

Department of Pharmacy Practice, Sri Adichunchanagiri College of Pharmacy, B. G. Nagara - 571448, Karnataka, India.

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Correspondence to Author:

Dr. M. N. Meghana

Pharm D Intern,
Department of Pharmacy Practice,
Sri Adichunchanagiri College of
Pharmacy, B. G. Nagara - 571448,
Karnataka, India.

E-mail: mnmeghana77@gmail.com

ABSTRACT: Background: In India, Hypertension is becoming more common and severe, and it is linked to various socio-demographic factors. Many people are ignorant of their illness's severity and the significance of managing it due to a lack of adequate support and education. The first step in developing a preventive program for any health condition is obtaining information regarding the level of awareness. **Objective:** To assess the knowledge, attitude, and practice and socio-demographic factors among hypertensive patients in tertiary care teaching hospital. **Materials and Methods:** A prospective cross-sectional study was conducted on the sample size of 410 hypertensive patients admitted in the Medicine Unit of AH&RC during the period from February 2021 to July 2021. Socio-demographic details were collected using data collection forms. KAP scores were determined using a standardized and validated KAP questionnaire on hypertension consisting of 22 questions. **Results:** In our study, most of the participants were unaware of the risk factors associated with hypertension. 55% had moderate level of knowledge and same percent of participants had moderate attitude level and 78% had adequate practice level towards hypertension. Graduates had adequate knowledge, illiterates had poor knowledge and primary, secondary educated participants had moderate knowledge. Hence there was a significant relation ($P=0.001$) between education level and knowledge among hypertensive patients. **Conclusion:** Most of the patients had poor knowledge towards normal BP levels, symptoms, risk factors and complications of hypertension. Hence, this study signifies that patients require support and guidance from the health care professionals for improving their knowledge towards hypertension.

INTRODUCTION: Hypertension is not a disease but it is a major risk factor for cardiovascular problems¹⁻³. It has become one of the most prominent medical conditions linked to an increased risk of death from cardiovascular disease.

Hypertension is one of the biggest contributors to the global burden of illness, accounting for 9.4 million deaths annually and also for one-third of all preventable premature deaths⁴.

Hypertension is a major risk factor for chronic diseases and deaths worldwide, with the age-standardized prevalence of 24.1% and 20.1% in men and women respectively. This number is growing very fast. It is estimated that the number will reach more than 1.56 billion by the year 2025⁵. Socio-demographic factors play an important role in hypertensive patients⁶.

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Major socio-demographic factors which influence the hypertension are: age, gender, occupation, family history, education level, physical activity, hypertension duration, Alcohol intake, smoking⁷⁻¹⁴.

A KAP survey means knowledge, attitude, and practice. A proper assessment and understanding of KAP factors is highly useful in chronic conditions, such as hypertension which helps in the better prevention and control by adapting a lifelong healthy lifestyle^{2, 4, 11-13}. There is a need to investigate KAP among the general population, which helps develop programs for effective health education¹⁴⁻¹⁷.

The patients' knowledge and attitudes have a high influence on the management of the disease condition, which helps improve medication adherence, blood pressure control, morbidity, and mortality¹⁸. Patient's knowledge about hypertension and the benefits of lifestyle modifications is the key to successfully controlling hypertension. Good knowledge about hypertension helps improve self-management and control lifestyle habits of the patients^{6, 19, 20, 21, 22, 23}.

Good knowledge about the etiological factors, risk factors and complications of hypertension helps in prevention of its further complications among hypertensive patients. Hypertension has been labelled as 'silent killer' because it affects organs in a gradual and irreversible manner before any externally detectable symptoms appear. As a result, patients should be aware of the preventive strategy for hypertension control and adhere to the therapy as strictly as possible^{4, 24}.

The majority of inpatients treated in this hospital are from rural areas, it is essential to conduct this study here. The majority of them are completely unaware of their illness. As a result, it is necessary to assess their hypertension knowledge, attitude and practice.

Knowledge about hypertension, its etiological factors, risk factors, complications and diet is very important among hypertensive patients²⁵. Hence, a pharmacist can play an important role in reducing the complications of hypertension by educating hypertensive patients about their disease condition. Hence, this study is conducted to assess

hypertensive patients' present knowledge, attitude, and practice towards hypertension in AH & RC.

Objectives:

Primary Objective: To assess the knowledge, attitude, and practice in hypertensive patients in a tertiary care teaching hospital.

Secondary Objective: To assess the socio-demographic factors in hypertensive patients. To assess the knowledge of patients regarding hypertension.

MATERIALS AND METHODS: A prospective cross-sectional study was conducted on the sample size of 410 hypertensive patients admitted in the Medicine Unit of AH & RC during the period of 6 months from February 2021 to July 2021, after getting permission from Institutional Ethics Committee (Reference no: IEC/AH & RC/AC/017/2021). This study included all the inpatients diagnosed with hypertension with or without co-morbid conditions admitted to the medicine unit. Those patients who were not willing to participate were excluded from our study.

A specially designed suitable data collection form was used to collect the socio-demographic details, patient history of illness, personal, social, family and medication. KAP scores were determined using a standardised and validated KAP questionnaire on hypertension consisting of 22 questions.

This questionnaire consists of a total of 22 questions, 10 questions related to hypertension knowledge, 5 questions to assess patient's attitude towards hypertension and 7 questions regarding practice.

The collected data were subjected for Chi-square test using SPSS version 20 software. There was a significant relation between education level and knowledge among hypertensive patients (P=0.001).

RESULTS: A total of 410 hypertensive patients were included in this study during the data collection period.

The objective of this study was to assess the knowledge, attitude and practice in hypertensive patients and to assess the socio-demographic

factors in hypertensive patients in tertiary care teaching hospitals.

The collected data was subjected for the Chi-square test using SPSS version 20 software.

TABLE 1: SOCIO-DEMOGRAPHIC FACTORS OF HYPERTENSIVE PATIENTS

Socio-demographic Details		Frequency	Percent
Gender of the Patient	Female	191	46.6
	Male	219	53.4
Age of the patient	20-45	78	19
	46-60	197	48
	61-80	121	29.5
	Above 80	14	3.4
Family History of Hypertension	No	323	78.8
	Yes	87	21.2
Hypertension Duration	< 5 Years	183	44.6
	>=15 years	21	5.1
	10-14 years	50	12.2
	5-9 Years	156	38
Diet	Mixed	316	77.1
	Vegetarian	94	22.9
Social History	Alcoholic	53	12.9
	Both	49	12
	None	268	65.4
Occupation	Smoker	39	9.5
	Agriculture	128	31
	Business	69	17
	Housewife	158	39
Education	Others	55	13
	Graduate	38	9.3
	High School or Intermediate	130	31.7
Marital status	Illiterate	102	24.9
	Primary School	140	34.1
	Married	406	99
Hypertension Medication Administration	Unmarried	3	0.7
	Irregular	58	14.1
	Regular	352	85.9

TABLE 2: RESPONSES OF KNOWLEDGEBASED QUESTIONS

		Frequency	Percent
Do you know the definition of hypertension?	No	51	12.4
	Yes	359	87.6
Do you think hypertension is dangerous?	No	217	52.9
	Yes	193	47.1
Do you think lowering BP level improves your health?	No	122	29.8
	Yes	288	70.2
Do you think smoking and alcohol consumption causes hypertension?	No	258	62.9
	Yes	152	37.1
Do you think obesity is associated with hypertension?	No	192	46.8
	Yes	218	53.2
Do you think lifestyle change improves blood pressure?	Missing	1	0.2
	No	169	41.2
	Yes	240	58.5
Do you know the symptoms of hypertension?	No	118	28.8
	Yes	292	71.2
Do you think hypertension is a curable disease?	No	201	49
	Yes	209	51
Do you know the normal level of BP?	No	179	43.7
	Yes	231	56.3
Do you think you have to take antihypertensives lifelong?	No	119	29
	Yes	291	71

Table 2, shows the frequency and percentage of the responses of hypertensive patients to knowledge-related questionnaires.

TABLE 3: RESPONSES OF ATTITUDE-BASED QUESTIONS

		Frequency	Percent
Do you think regular medication will improve hypertension?	No	30	7.3
	Yes	380	92.7
Do you think medication alone can control hypertension?	No	279	68
	Yes	131	32
Do you think diet control will improve hypertension?	No	106	25.9
	Yes	304	74.1
Do you think low salt intake can control hypertension?	No	168	41
	Yes	242	59
Do you think physical activity will help in the control of hypertension?	No	109	26.6
	Yes	301	73.4

Table 3, shows the frequency and percentage of the responses of hypertensive patients towards attitude based questions.

TABLE 4: RESPONSES OF PRACTICE-BASED QUESTIONS

		Frequency	Percent
Are you going for a regular checkup?	No	97	23.7
	Yes	313	76.3
Are you following a healthy diet?	No	187	45.6
	Yes	223	54.4
Did you ever experience any side effects of drugs?	No	400	97.56
	Yes	10	2.44
Did you ever take double dose?	No	395	96.34
	Yes	15	3.65
Are you avoiding extra added salt?	No	137	33.4
	Yes	273	66.6
Do you exercise every day?	No	247	60.2
	Yes	163	39.8
Are you taking your drugs regularly?	No	86	21
	Yes	324	79

Table 4, shows the frequency and percentage of responses of hypertensive patients to practice-based questions.

TABLE 5: ASSOCIATION OF KNOWLEDGE, ATTITUDE, AND PRACTICE SCORES WITH EDUCATIONAL LEVEL

		Graduate	High School or Intermediate	illiterate	Primary School	χ^2 Value	P-Value	
Knowledge score	Adequate	N	23	33	12	23	47.67	0.001*
		%	60.50%	25.40%	11.80%	16.40%		
	Moderate	N	12	71	56	88		
		%	31.60%	54.60%	54.90%	62.90%		
Attitude score	Poor	N	3	26	34	29	12.58	0.05
		%	7.90%	20.00%	33.30%	20.70%		
	Adequate	N	14	31	39	31		
		%	36.80%	23.80%	38.20%	22.10%		
Practice score	Moderate	N	21	72	49	84	8.83	0.183
		%	55.30%	55.40%	48.00%	60.00%		
	Poor	N	3	27	14	25		
		%	7.90%	20.80%	13.70%	17.90%		
Practice score	Adequate	N	35	102	80	102	8.83	0.183
		%	92.10%	78.50%	78.40%	72.90%		
	Poor	N	3	28	22	38		
		%	7.90%	21.60%	21.60%	27.10%		

*Statistical significance set at 0.05; N: Number of samples; χ^2 Value: Chi-square Value.

Interpretation: Chi-square analysis exhibits a statistically significant adequate knowledge score among Graduates (60.5%) and found to be poor knowledge score among illiterates (33.3%) when compared to the subjects with other educational

qualifications ($\chi^2(6)= 47.67$; $P=0.001$). The statistics displayed no statistically significant association of educational levels with attitude ($\chi^2(6)= 12.58$; $P=0.05$) and Practice scores ($\chi^2(6)= 8.83$; $P=0.183$).

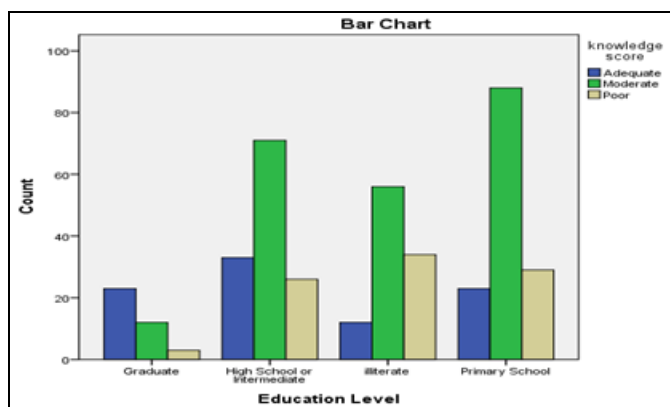


FIG. 1: ASSOCIATION OF KNOWLEDGE WITH EDUCATIONAL LEVEL

Fig. 1 shows that hypertensive patients with high school level of education had adequate knowledge towards hypertension, hypertensive patients with primary education had moderate knowledge towards hypertension and illiterate hypertensive patients had poor knowledge towards hypertension.

DISCUSSION: A total of 410 hypertensive patients participated in this study. We assessed the socio-demographic factors such as age, sex, family history, duration of hypertension, marital status, diet, social habits, and education status in the hypertensive patients of the medicine unit in AH & RC.

Age: In this study, 48% (197) were aged between 46-60 years.

Gender: 53.4% (219) were males and 46.6% (191) were females. In a study conducted by Manasa Bollampally, 52.5% were males, and 47.5% were females³.

Family History of Hypertension: 78.8% (323) patients did not have a family history of hypertension and only 87(21.1%) patients had a family history of hypertension. A study conducted at china by Miao Liu revealed that 53% of the total participants were having a family history of hypertension²⁶.

Hypertension Duration: 44.6% (183) of patients had hypertension for <5 years, followed by 38% (156) with 5-9 years and 12.2% (50) with 10-14 years and 5.1% (21) with ≥ 15 years.

Diet: We found that 77.1% (316) participants were following mixed diet and 22.9% (94) were vegetarians.

Occupation: In our study, 39% (158) were housewives, 31% (128) were farmers, 17% (69) were business men and others were 13% (55). In a study conducted at North Ethiopia by AH Jufar found that 28.22% of total participants were housewives, 6.74% were farmers, 13.49% were businessmen and others were 51.53%²⁷. Large number of the participants in this study were farmers because our study site is located in a remote area.

Social History: 65.4% (268) of the participants were not having any social habits such as smoking and alcohol consumption, 12.9% (53) were smokers, 49 (12%) were both smokers and alcoholics and 39 (9.5%) participants were only smokers. In a study conducted by AH Jufar in North Ethiopia found that 80% were non-smokers and 78.4% were non-alcoholic, 20% were smokers, 21.6% were alcoholics²⁷.

Medication Compliance: 85.5% (352) were taking their hypertensive medication regularly. In a study conducted by Manasa Bollampally at Telangana in India, 64.38% of the total participants were taking their medications regularly³.

Education Level: Education was one of the major factors which influenced the knowledge level in the hypertensive patients, patients with primary education were 34.1% (140), high school education was 31.7% (130), graduates were 9.3% (38), and illiterates were 24.9% (102). A study conducted by Ayushi Jayesh Shah at Mumbai found that most participants were illiterate 80.5%, Patients with primary education were 66.2%, and patients with secondary-Higher education were 70.7%²⁸.

Knowledge Level: 87.6% (359) were aware of the definition of hypertension, 71.2% (292) were aware of its symptoms, 62.9% (258) had no idea whether smoking or drinking alcohol caused high blood pressure, 52.9% (217) thought hypertension is not dangerous, and obesity is linked to hypertension, though 46.8% (192) unaware of this. This finding was similar to the previous study conducted by Manasa Bollampally³.

Attitude Level: 92.7% (380) of the total participants think that regular medication will improve their BP level, 74.1%(304) think that diet control will improve their BP level, 73.4% (301)

think that physical activity will help in the control of hypertension and 68% (279) think medication alone cannot control hypertension.

Practice Level: Most of the participants *i.e.*, 76.3% (313) were going for their regular BP checkup, 97.56% (400) did not experience any side effects of drugs, 96.34% (395) never taken double dose, 66.6% (273) were avoiding extra added salt, 60.2% (247) were not doing exercise every day. 54.4% (223) were following a healthy diet in our study. This finding was similar to the previous study conducted by Manasa Bollampally³.

Overall Knowledge Level: knowledge of the hypertensive patients was graded as (<5) poor, (5-7) Moderate, and (>7) adequate, and 55% (227) had a moderate level of knowledge, 23% (92) had poor level of knowledge and 22% (91) had adequate knowledge. In a study conducted by Manasa Bollampally at Telangana noticed that 47.5% were found with poor knowledge levels and 52.2% with good knowledge level towards hypertension³.

Overall Attitude Level: Attitude level was graded as (<3) poor, (3-5) moderate and (5) Adequate. 55% (226) had a moderate attitude level, 28% (115) had adequate attitude level and 17% (69) had poor attitude level towards hypertension. In a study conducted by Manasa Bollamapally at Telangana, 46.25% and 53.75% of the total participants were found with poor attitude levels and a good attitudes, respectively³.

Overall Practice Level: Practice level was graded as (≤ 3) Poor and (≥ 4) Adequate. 78% (319) had adequate practice level and 22% (91) had poor practice level towards hypertension. In a study conducted by Manasa Bollamapally at Telangana, 58.75% had poor practice and 41.25% had good practice towards hypertension³. We noticed that majority of the participants had good knowledge, attitude and practice towards hypertension compared to the study conducted by Manasa Bollampally at Telangana.

Association of Education Level of Hypertensive Patients with Their KAP Level: We noticed that most of the participants had adequate knowledge of hypertension because of their good literacy level. Few of them had poor knowledge of hypertension because of poor literacy level. Thus, the literacy

level of patients was found to be one of the key factors influencing their knowledge level.

Out of 410 hypertensive patients, 73.44 % had a positive attitude toward hypertension, and only 26.56% had a negative attitude. Both literate and illiterate hypertensive patients had a positive attitude about hypertension, regardless of their educational level. Because the attitude of hypertensive patients was mostly influenced by their concern and awareness about their health and their level of adherence to the recommendations offered by their physicians, rather than their educational level in our study.

We noticed that the education level of hypertensive patients mainly influenced their knowledge level. There was a significant relationship between the education level and knowledge in the hypertensive patients because of a significant difference in the knowledge scores between illiterates and literates. Hypertensive patient's education levels have little impact on their attitudes and practices. Hence, both literates and illiterates had a positive attitude and adequate practice regarding hypertension.

We noticed that the patients were knowledgeable about hypertension in general but were less knowledgeable about specific factors related to their condition, their own level of BP control, hypertension risk factors, and its complications. This finding was similar to the study conducted by Olivera²⁹. Our findings indicate that patients require assistance and direction to improve their disease management. Thus, health care professionals can significantly enhance patient understanding and adherence through patient education regarding diet, exercise, proper medication use, complications, and risk factors associated with hypertension.

CONCLUSION: Patients had adequate knowledge about diet control, physical activity, and regular medication use but poor knowledge about normal BP level, symptoms, risk factors, and complications of hypertension. Hence, this study signifies that patients require support and guidance from health care professionals to improve their knowledge of hypertension. In the future, this research can also assist clinical pharmacists in conducting health-care programs and educational

programs in hospitals to educate hypertensive patients about their disease by increasing their knowledge, attitude, and practice. We conclude that this study serves to improve the knowledge and quality of life among hypertensive patients.

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CONFLICTS OF INTEREST: None declared

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