



Prevalence Of Hypertension Among The General Patient Population Attending A Tertiary Care Hospital In Chennai

¹Dr. R. Sukumar, ²Dr. M. Pradeep Raj, ³Dr. Jai Mangla

¹Professor & Head, ²Associate Professor, ³2nd Year Post Graduate

Department Of General Medicine, Sri Muthukumaran Medical College Hospital And Research Institute, Chikkarayapuram, Kundrathur Road, Near Mangadu, Chennai - 600 069

***Corresponding Author:**

Dr. Jai Mangla

2nd Year Post Graduate, Department Of General Medicine, Sri Muthukumaran Medical College Hospital And Research Institute, Chikkarayapuram, Kundrathur Road, Near Mangadu, Chennai - 600 069.

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Abstract

Background: In India, the prevalence of hypertension is reported to be increasing rapidly in the urban areas and the same trend is spreading gradually to rural areas. It is estimated that there were about 66 million hypertensives in India. Lack of knowledge about the morbidity, complications and the method of control of hypertension contributes to a large percentage of undetected and untreated hypertensive subjects in the community. Therefore, health care professionals must identify and treat patients with hypertension but also promote a healthy lifestyle and preventive strategies to decrease the prevalence of hypertension in the general population.

Aim & Objective: To assess the knowledge and attitude toward controlling blood pressure among Patients with Primary Hypertension.

Methods: This cross-sectional study was conducted in the year 2020 over 3 months at Sri Muthukumaran Medical College Hospital and Research Institute, Chikkarayapuram, Kundrathur Road, Near Mangadu, Chennai - 600 069. The demographic variables were collected by using the questionnaire. It has 3 sections. It contains 25 multiple choice questions to assess the knowledge in controlling blood pressure among the patients in the areas of causes, symptoms, medication, dietary changes, physical exercise, follow-up, and alternatives. The questionnaire to assess the pretest knowledge and attitude toward controlling blood pressure were distributed to fill in by the subjects. After collecting back the questionnaire, a teaching session by lecturing regarding controlling blood pressure was conducted using a PowerPoint presentation and booklets about blood pressure control were distributed among the clients. After 7 days, the post-test was conducted to assess the knowledge and attitude towards controlling blood pressure by using the same questionnaire.

Results: shows that among 50 patients with primary Hypertension, 25 (50%) had poor knowledge and 25 (50%) had an adequate level of knowledge in the pretest. In post-test, 42 (84%) gained an adequate level of knowledge, and 8 (16%) had a good level of knowledge. 1 (2%) patients had an unfavorable attitude and 49 (98%) patients had a moderately favorable attitude in the pretest. In post-test, 29 (58%) patients had a moderately favorable attitude and 21 (42%) of them had the most favorable attitude. Therefore there is a significant difference between the pretest and post-test mean scores. It implies that the attitude towards controlling blood pressure was improved significantly after the IEC package. The other variables like sex, religion, occupation, marital status, type of family, and dietary pattern were not associated with the knowledge score in the pretest.

Conclusion: Information, Education, and Communication regarding controlling blood pressure was given to assess its effectiveness among patients with primary hypertension. The post-test score of knowledge and

attitude was highly significant when compared to the pretest score using the paired „t“ test. Thus the present study shows that the IEC package was effective in improving the knowledge and attitude towards blood pressure control significantly among the patients with Primary Hypertension. therapies. The correct answer carries one mark and the wrong answer carries zero mark. The possible maximum score is 25 and the minimum score is 0.

Keywords: Attitude, blood pressure, Adequate knowledge

Introduction

High blood pressure is a silent killer. It usually shows no symptoms and many people do not realize they have it. High blood pressure, also known as raised blood pressure or hypertension increases the risk of heart attacks, strokes, and kidney failure. Even moderate elevation of arterial blood pressure is associated with a shortened life expectancy.[1] If left uncontrolled, high blood pressure can also cause blindness, irregularities of the heartbeat, and heart failure Hypertension is having a blood pressure higher than 140 over 90 mmHg, a definition shared by all the medical guidelines. This means the systolic reading (the pressure as the heart pumps blood around the body) is over 140 mmHg (millimeters of mercury) or the diastolic reading (as the heart relaxes and refills with blood) is over 90 mmHg.[2] While this threshold has been set to define hypertension, it is for clinical convenience and because achieving targets below this level brings benefits to patients[3]. High blood pressure, or hypertension, is a condition in which blood pressure is chronically elevated. According to the National Institutes of Health, blood pressure readings of 140/90 mm-Hg and higher on recurring measurements are considered hypertension.[4] Persistent hypertension is one of the highest risk factors for stroke, heart attack, heart failure, and arterial aneurysm. It is a leading cause of chronic kidney failure. In India, the prevalence of hypertension is reported to be increasing rapidly in the urban areas and the same trend is spreading gradually to rural areas. Lack of knowledge about the morbidity, complications, and the method of control of hypertension contributes to a large percentage of undetected and untreated hypertensive subjects in the community. Therefore, health care professionals must identify and treat patients with hypertension but also promote a healthy lifestyle and preventive strategies to decrease the prevalence of hypertension in the

general population.[5] Risk factors for hypertension are majorly divided into two classifications. The first one is non-modifying risk factors and the second one is modifying risk factors non modifying risk factors are age, sex genetic factors, and ethnicity. Modifying risk factors are density, increased salt intake, increasing cholesterol, decreasing factor intake, and decreasing physical activity, higher-level blood pressure in low socio-economic groups. Other factor includes noise, vibration, temperature, and humidity.[6] The majority of risk factors are prevented by healthy lifestyle factors. Dietary approach to sleep hypertension (DASH) is now recommended as an important nutrient and fiber but also includes foods that contain two half times the amounts of electrolytes potassium, calcium, magnesium, phosphorus, potassium, and sodium [7]

METHODS

This cross-sectional study was conducted in the year 2020 over 3 months at Sri Muthukumaran Medical College Hospital and Research Institute, Chikkarayapuram, Kundrathur Road, Near Mangadu, Chennai - 600 069. The demographic variables were collected by using the questionnaire. It has 3 sections. It contains 25 multiple choice questions to assess the knowledge in controlling blood pressure among the patients in the areas of causes, symptoms, medication, dietary changes, physical exercise, follow-up, and alternatives The questionnaire to assess the pretest knowledge and attitude toward controlling blood pressure were distributed to fill in by the subjects. After collecting back the questionnaire, a teaching session by lecturing regarding controlling blood pressure was conducted using a PowerPoint presentation and booklets about blood pressure control were distributed among the clients. After 7 days, the post-test was conducted to assess the knowledge and attitude towards controlling blood pressure by using the same questionnaire.

Inclusive Criteria: Clients within the age group of 35 to 65 years Both male and female clients with Primary Hypertension, Clients with blood pressure ranging from 140-180/90-110 mm of Hg.
Exclusive Criteria: Clients who are critically ill, Clients with altered sensory perception, Clients who are having the complications of hypertension, Clients who are not willing to participate

Stastical Analysis

The investigator adopted descriptive and inferential statistics to analyze the data. The demographic variables were analyzed by using frequency distribution and percentages. A comparison of pretest and post-test scores was computed based on paired „t“ test. Karl Pearson“s coefficient was used to assess the correlation between knowledge and attitude towards controlling blood pressure. Association of knowledge and attitude scores with selected demographic variables were computed based on the chi-square test.

Table:1 Description of demographic Variables of Patients with Primary Hypertension

S. No.	Demographic Variables	Frequency (f)	Percentage (%)
1.	Age		
	a) 35 – 45 years		
	b) 46 – 55 years	14	28
	c) 56 – 65 years	21	42
2.	Sex		
	a) Male		
	b) Female	20	40
3.	Religion		
	a) Hindu		
	b) Muslim	43	86
	c) Christian	7	14
	d) Others	0	0
		0	0

4.	<p>Education</p> <p>a) Illiterate</p> <p>b) Primary</p> <p>c) Secondary</p> <p>d) Higher secondary</p> <p>e) Graduate</p>	<p>2</p> <p>26</p> <p>15</p> <p>5</p> <p>2</p>	<p>4</p> <p>52</p> <p>30</p> <p>10</p> <p>4</p>
S. No.	Demographic Variables	Frequency (f)	Percentage (%)
5.	<p>Occupation</p> <p>a) Unemployed</p> <p>b) Business</p> <p>c) Technical work</p> <p>d) Professional</p>	<p>25</p> <p>19</p> <p>4</p> <p>2</p>	<p>50</p> <p>38</p> <p>8</p> <p>4</p>
6.	<p>Marital status</p> <p>a) Married</p> <p>b) Single</p> <p>c) Divorcee</p> <p>d) Widow/ widower</p>	<p>41</p> <p>1</p> <p>0</p> <p>8</p>	<p>82</p> <p>2</p> <p>0</p> <p>16</p>

7.	<p>Monthly income</p> <p>a) Below Rs. 5000/-</p> <p>b) Rs. 5001- 15,000/-</p> <p>c) Rs.15,001- 25,000/-</p> <p>d) Above Rs. 25,000/-</p>	<p>6</p> <p>21</p> <p>20</p> <p>3</p>	<p>12</p> <p>42</p> <p>40</p> <p>6</p>
8.	<p>Place of residence</p> <p>a) Rural</p> <p>b) Urban</p> <p>c) Semi-urban</p>	<p>17</p> <p>24</p> <p>9</p>	<p>34</p> <p>48</p> <p>18</p>
9.	<p>Type of family</p> <p>a) Nuclear</p> <p>b) Joint</p>	<p>28</p> <p>22</p>	<p>56</p> <p>44</p>
10.	<p>Dietary pattern</p> <p>a) Vegetarian</p> <p>b) Non-vegetarian</p>	<p>2</p> <p>48</p>	<p>4</p> <p>96</p>

Table :1 shows the distribution of demographic variables of patients with Primary Hypertension. About the distribution of age group of hypertensive patients, 35- 45 years were 14 (28%), 46- 55 years were 21 (42%) and

56- 65 years were 15 (30%). Regarding the sex of patients, males were 20 (40%) and females were 30 (60%). On considering the religion, 43 (86%) belong to Hindu, and 7 (14%) belong to Muslim. Considering the education of patients, 2 (4%) were illiterate, 26 (52%) had primary education, 15 (30%) had secondary education, 5 (10%) had higher secondary and 2 (4%) were graduates. Regarding the occupation, 25 (50%) were unemployed, 19 (38%) were doing business, 4 (8%) were technical workers and 2 (4%) were professionals. Looking at the marital status of the patients, married were 41 (82%), the single was 1 (2%), none was divorcee, and widow/ widower was 8 (16%). Considering the monthly income of patients, 6 (12%) had below Rs. 5000/-, 21(42%) had between Rs. 5001- Rs.15,000/-, 20(40%) had Rs. 15,001- 25,000/- and 3 (6%) had above Rs. 25,000/-. The place of residence of patients with hypertension was 17 (34%) rural, 24 (48%) urban, and 9 (18%) semi-urban. Regarding the type of family, 28 (56%) belong to the nuclear family and 22 (44%) belong to the joint family. About the dietary pattern of hypertensive patients, 2 (4%) were vegetarian and 48 (96%) were non-vegetarian.

Table: 2 Description of Pretest and Post-test Levels of Knowledge in Controlling Blood Pressure among the Clients with Primary Hypertension

S.No.	Knowledge Level	Pretest		Post Test	
		f	%	f	%
1.	Poor Knowledge	25	50	0	0
2.	Adequate Knowledge	25	50	42	84
3.	Good Knowledge	0	0	8	16

Table 2 shows that among 50 patients with primary Hypertension, 25 (50%) had poor knowledge and 25 (50%) had an adequate level of knowledge in the pretest. In post-test, 42 (84%) gained an adequate level of knowledge, and 8 (16%) had a good level of knowledge.

Table. 3 Description of Pretest and Post-Test Attitude Levels in Controlling Blood Pressure Among the Clients with Primary Hypertension

S.No.	Attitude Level	Pretest		Post Test	
		f	%	f	%
1.	Unfavourable attitude	1	2	0	0
2.	Moderately favourable attitude	49	98	29	58
3.	Most favourable attitude	0	0	21	42

Table: 3 shows that 1 (2%) patients had an unfavorable attitude and 49 (98%) patients had a moderately favorable attitude in the pretest. In post-test, 29 (58%) patients had a moderately favorable attitude and 21 (42%) of them had the most favorable attitude

Table. 4 Distribution of Statistical Value of Pretest and Post-Test Knowledge Scores in Controlling Blood Pressure

S. No.	Knowledge	Mean	S.D	't' Value	Level of Significance
1.	Pretest	10.9	3.26	22.62*	0.05
2.	Post-test	17.14	2.93		

Table 4 shows that the calculated value of „t“ is 22.62 at 49 (df) which is greater than the table value (t=2) is significant at a 0.05 level of significance. Therefore there is a significant difference between pretest and post-test mean scores. It implies that the knowledge score of patients with primary hypertension in controlling their blood pressure was improved significantly after the intervening IEC package.4

Table. 5 Distribution of Statistical Value of Pretest and Post-Test Attitude ScoreS in Controlling Blood Pressure

S. No.	Attitude	Mean	S.D	't' Value	Level of Significance
1.	Pretest	43.72	3.55	18.97*	0.05
2.	Post-test	55.2	2.19		

Table 5 shows that the calculated value of „t“ is 18.97 at 49 (df) which is greater than the table value (t= 2) and is significant at a 0.05 level of significance. Therefore there is a significant difference between the pretest and post-test mean scores. It implies that the attitude towards controlling blood pressure was improved significantly after the IEC package.

Table. 6 Correlation Between Pretest Knowledge Score and Attitude Score Regarding Controlling Blood Pressure

S. No.	Pretest	Mean	S.D	r
1.	Knowledge	10.9	3.26	+0.36
2.	Attitude	43.72	3.55	

Table 6 shows that there is a positive correlation between the knowledge score and attitude score in the pretest.

Table. 7 Correlation Between Post-Test Knowledge Score and Attitude Score Regarding Controlling Blood Pressure

S. No.	Post Test	Mean	S.D	r

1.	Knowledge	17.14	2.93	+0.13
2.	Attitude	55.2	2.19	

Table 7 shows that there is a positive correlation between the knowledge score and attitude score towards controlling blood pressure post-test.

Discussion

The pretest knowledge and attitude towards controlling blood pressure among the samples were assessed by using the knowledge and attitude questionnaire. The mean pretest score of knowledge was 10.9 and the post-test was 17.14. The mean pretest score of attitude was 43.72 and the post-test score was 55.2. The mean difference implies that the subjects had inadequate knowledge and poor attitude towards controlling blood pressure. A study was conducted by Jayasree, T, M et.al to understand the hypertension related-knowledge, attitudes, and behavior status and provide the basis for integrated management of hypertension. Data was collected using questionnaires and physical examination. The results showed that the awareness of hypertension among patients was low and some patients had an incorrect attitude towards hypertension control. The Information, Education, and Communication package on controlling blood pressure were delivered to the subjects with the help of a PowerPoint presentation and booklet distribution regarding blood pressure control. The package consisted of the areas of causes of hypertension, medications, diet, physical exercise, follow-up, and alternative therapy. The subjects communicated their ideas actively and clarified their doubts [8]. Mahtani, K, R conducted a study to assess the effectiveness of a multifaceted IEC program on blood pressure among hypertensive patients. Patients attended four educational units held by hypertension nurses and physicians. The result of the study showed the program’s ability to improve intermediate outcomes in hypertensive patients as their knowledge level was improved significantly. Better blood pressure control and significant reduction of the individual cardiovascular risk profile were achieved.[9] The mean pretest score of knowledge was 10.9 and the post-test was 17.14. The mean pretest score of attitude was 43.72 and the post-test score was 55.2. Paired „t“ test was performed to assess the effectiveness of the intervention. The calculated „t“ value of the knowledge score was

22.62 and that of the attitude score was 18.97. Both the „t“ value obtained for the knowledge score and attitude score was higher than the table value at a 0.05 level of significance. This reveals that there was a significant improvement in knowledge and attitude towards controlling blood pressure among patients with Primary hypertension. This in turn reveals that the IEC package was effective. [10] A study conducted by Muthulakshmi, P et.al to assess the knowledge and attitude on lifestyle modifications among hypertensive patients revealed that the knowledge level is correlated to the attitude toward lifestyle modifications positively and moderately. The study showed that when the knowledge score increased, the attitude score also increased moderately. In the demographic variables, age, education, monthly income, and place of residence were found to be significantly associated with the pretest knowledge in controlling blood pressure. The other variables like sex, religion, occupation, marital status, type of family, and dietary pattern were not associated with the pretest knowledge score. [11] Raghupathy et.al conducted a study to develop a scale to measure knowledge about hypertension. The Hypertension Knowledge-level scale was generated based on content, face, and construct validity, internal consistency, test re-test reliability, and discriminative validity procedures. Significant relationships were found between knowledge of hypertension and age, gender, educational status, and family income. No significant correlation was found between working at an income-generating job. [12] Among the demographic variables, education had a significant association with the attitude of the clients towards controlling blood pressure. Other variables like age, sex, religion, occupation, marital status, monthly income, place of residence, type of family, and dietary pattern were not associated with the attitude of the clients towards controlling blood pressure. [13] Sathish, Tmet. al conducted a study on the knowledge, attitude, and practice of hypertension management among hypertensive patients in

developing countries. The study showed that the attitude of patients towards hypertension management had a significant relationship with the age and educational status of the patients.[14,15]

Conclusion

Hypertension is easily diagnosable and treatable with lifestyle modifications and effective medicines. Thus, hypertension control provides an entry point to deal with other non-communicable diseases as any intervention will help concomitantly address other non-communicable diseases also. Awareness about the disease condition contributes greatly toward its control and management. Thus, to increase the awareness about hypertension, information about prevention and control of hypertension can be incorporated into the information education and communication (IEC) components of all National Programmes. Information, Education, and Communication package regarding controlling blood pressure were given to assess its effectiveness among the patients with primary hypertension. The post-test score of knowledge and attitude was highly significant when compared to the pretest score using the paired „t“ test. Thus the present study shows that the IEC package was effective in improving the knowledge and attitude towards blood pressure control significantly among the patients with Primary Hypertension.

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