

Knowledge, Attitude and Practice (Kap) Study on Hypertension in Hypertensive Patients at A Tertiary Care Hospital- A Cross Sectional Study.

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BACKGROUND:

ABSTRACT

Hypertension is becoming a global epidemic and a threat to the population. Hypertension remains a major risk factor for cardiovascular diseases globally. Most people with hypertension have no symptoms at all this is why it is known as silent killer. The increase in prevalence of hypertension is attributed to age of population, urbanization, sedentary habits, and lack of physical activity, obesity, alcohol consumption and exposure to continuous stress. There is need to investigate KAP among the general population which help in the future development programs for effective health education.

AIM:

The main aim of this study was to assess the patients Knowledge, Attitude and Practice regarding hypertension.

METHOD:

This is a cross-sectional study which was carried out in and around narasaraopeta over a period of 6 months i.e, October 2020 to march 2021. About 150 study participants were analyzed. For KAP of hypertension. Data were collected using a structured interviewer-guided questionnaire.

RESULTS:

First and second reviews for knowledge reveal that results of second the epidemiology study reveal that majorly females are more prone to the hypertension. the comparison KAP review was 38.8% and the first

KAP review was 32.5%. the attitude comparison also shows that there is an increase in second review of attitude about 39.3% while first review is 35.9%. first review of practice is 39.2% and second review of practice is about 42.9%.

CONCLUSION:

We state that knowledge was improved by 6%, attitude was improved by 4% and practice was improved by 3%. this was a fair improvement in KAP. In our study we found that there is a great lack of knowledge and attitude compared to practice. Recommendations of this study were there is an urgent need for increasing awareness of hypertension. Health professionals must educate hypertensive patients about their disease, their medications and lifestyle modification through patient counseling.

KEYWORDS: KAP, QUESTIONNAIRE

I. INTRODUCTION

1.1 Hypertension:

Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure. Each time the heart beats, it pumps blood into the vessels. Blood pressure is created by the force of blood pushing against the walls of blood vessels (arteries) as it is pumped by the heart. The higher the pressure the harder the heart must pump.^[5]

Blood Pressure	Systolic mm HG	Diastolic mm HG
Normal	<120	<80
Elevated	120-129	<80
High blood pressure-stage 1	130-139	80-89
High blood pressure-stage 2	≥140	≥90
Hypertensive crisis	>180	>120

Table 1.1 Blood pressure guidelines.

1.2 Types of hypertension:

There are two primary hypertension types. For 95 percent of people with high blood pressure the cause of their hypertension is unknown; this is called essential, or primary, hypertension. When a cause can be found, the condition is called secondary hypertension.

1.2.1 Essential hypertension:

This type of hypertension is diagnosed after a doctor notices that your blood pressure is high on three or more visits and eliminates all other causes of hypertension. Usually people with essential hypertension have no symptoms, but you may experience frequent headaches, tiredness, dizziness, or nosebleeds. Although the cause is unknown, researchers do know that obesity, smoking alcohol, diet, and heredity all play a role in essential hypertension.

1.2.2 Secondary hypertension:

The most common cause of secondary hypertension is an abnormality in the arteries supplying blood to the kidneys. Other causes include airway obstruction during sleep, diseases and tumors of the adrenal glands, hormone abnormalities, thyroid disease, and too much salt or alcohol in the diet. Drugs can cause secondary hypertension, including over-the-counter medications such as ibuprofen (Motrin, Advil, and others) and pseudoephedrine (Afrin, Sudafed, and others).

1.2.3 Additional Hypertension Types:

Isolated systolic hypertension, malignant hypertension, and resistant hypertension are all recognized hypertension types with specific

diagnostic criteria.

1.3 Epidemiology:

High blood pressure (BP) is ranked as the third most important risk factor for attributable burden of disease in south Asia (2010). Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and health care systems in India. HTN is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease (CHD) deaths in India.

According to the WHO 2008 estimates, the prevalence of raised BP in Indians was 32.5% (33.2% in men and 31.7% in women). However, only about 25.6% of treated patients had their BP under control, in a multicentre study from India on awareness, treatment, and adequacy of control of HTN. [26]

1.4 Etiology:

Primary or essential hypertension: Diabetes mellitus, obesity, excessive alcohol intake, smoking, sodium retaining increased hormones and vasoconstrictors, increased SNS activity, stress, hereditary.

Secondary hypertension: Chronic renal diseases, endocrine disorders, sleep apnea, sodium retention.

Drugs causing hypertension: Nonsteroidal anti-inflammatory drugs, Corticosteroids, Oral contraceptives, Sympathomimetics, Erythropoietin, Cyclosporin.

1.5 Risk factors:

Age, overweight or obese, Alcohol and tobacco use. Men are more prone to hypertension at a younger age. Existing health conditions like Cardiovascular

disease, diabetes, chronic kidney disease, and high cholesterol levels can lead to hypertension, especially as people get older.

1.6 Pathophysiology:

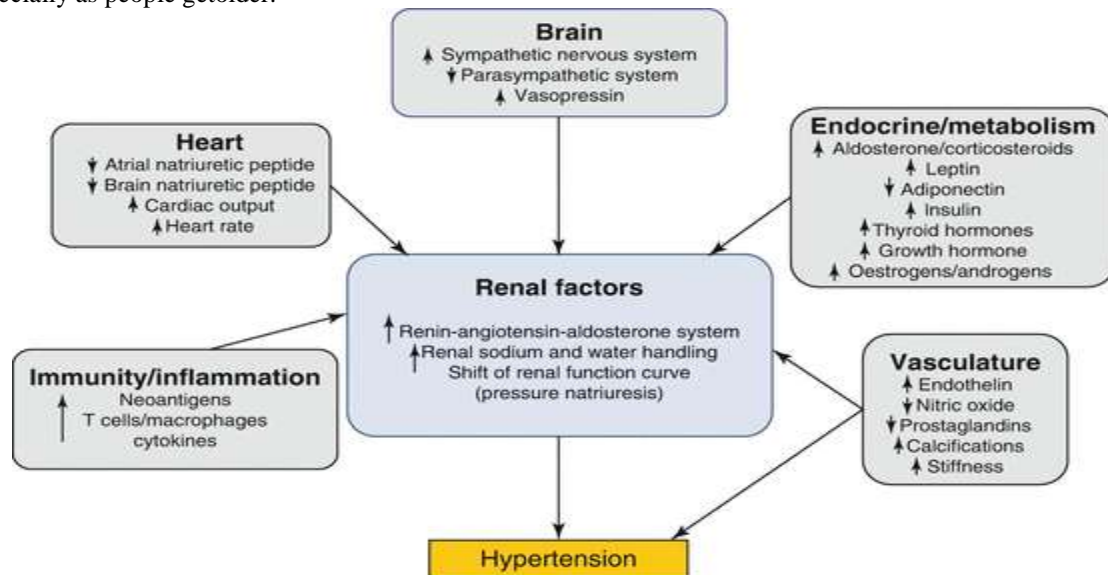


Figure 1.1 Pathophysiology of Hypertension

1.7 Signs and symptoms:

Severe headache, fatigue or confusion, vision problems, chest pain, difficulty breathing, irregular heartbeat, blood in the urine, pounding in your chest, neck, or ears.

1.8 Diagnosis:

Blood pressure measurement is done by a sphygmomanometer.

1.9 Non-pharmacological treatment:

Hypertension is one of the most common conditions encountered in primary care. Non-pharmacologic strategies have been shown to help lower blood pressure. Lifestyle modifications are recommended for all patients with hypertension. The American Heart Association/American College of Cardiology lifestyle management guideline recommends a diet emphasizing vegetables, fruits, and whole grains; limiting sodium intake to less than 2,400 mg per day; and exercising three or four times per week for an average of 40 minutes per session. Other non-pharmacologic strategies include weight loss, tobacco cessation, decreased alcohol consumption, biofeedback, and self-measured blood pressure monitoring. For patients with obstructive sleep apnea, the use of continuous positive airway pressure has been shown to improve blood pressure.

e. Dietary supplements such as garlic, cocoa, vitamin C, coenzyme Q10, omega-3 fatty acids, and magnesium have been suggested for lowering blood pressure, but evidence is lacking. Diet, physical activity, and weight loss, smoking cessation, alcohol reduction, dietary supplements, relaxation techniques, self-measured blood pressure monitoring.

1.10 Pharmacological treatment:

1.10.1 Diuretics:

Diuretics help the body get rid of excess sodium (salt) and water and help control blood pressure. They are often used in combination with additional prescription therapies.

1.10.1.1 Thiazide diuretics: Chlorthalidone, Chlorothiazide, Hydrochlorothiazide

1.10.1.2 Potassium-sparing diuretics: Amiloride hydrochloride, Spironolactone, Triamterene.

1.10.1.3 Loop diuretic: Furosemide

1.10.1.4 Combination diuretics: Amiloride hydrochloride + Hydrochlorothiazide, spironolactone + hydrochlorothiazide, triamterene + hydrochlorothiazide.

1.10.2 Beta-blockers:

Acebutolol, Atenolol, Bisoprolol fumarate,

Cartelolhydrochloride, Metoprolol tartrate, Metoprolol succinate, Nadolol, Penbutolol sulphate, Pindolol, Propranolol hydrochloride.

1.10.2.1 Combination beta-

blocker/diuretic: Hydrochlorothiazide, bisoprolol

1.10.3 ACE inhibitors:

Benazepril

hydrochloride, Captopril, Enalapril maleate, Lisinopril, Perindopril, Ramipril, Trandolapril.

1.10.4 Angiotensin II receptor blockers:

Candesartan, Eprosartan mesylate, Irbesartan, Losartan potassium, Telmisartan, Valsartan.

1.10.5 Calcium channel blockers:

Amlodipine besylate, Bepridil, Diltiazem hydrochloride, Felodipine, Isradipine, Nicardipine, Nifedipine, Nisoldipine, Verapamil hydrochloride.

1.10.6 Alpha blockers:

Doxazosin mesylate, Prazosin hydrochloride, Terazosin hydrochloride.

1.10.7 Alpha-2 Receptor Agonists:

Methyl dopa.

1.10.8 Combined alpha and beta-blockers:

Carvedilol, Labetalol hydrochloride.

1.10.9 Central agonists:

Alpha methyldopa,

Clonidine hydrochloride, Guanabenz

acetate, Guanfacine hydrochloride.

1.10.10 Peripheral adrenergic inhibitors:

Guanadrel, Guanethidine monosulfate, Reserpine.

1.10.11 Blood vessel dilators (vasodilators):

Hydralazine hydrochloride, Minoxidil.

1.11 : KAP QUESTIONNAIRE:

Introduction: The KAP is a representative survey conducted

on a specific population to identify the knowledge (K), attitudes (A) and practices (P) of a population on a specific topic: Hypertension in our case. In the majority of KAP studies, data are gathered orally by an interviewer who uses a structured, standardized questionnaire. These data can then be quantitatively or qualitatively analyzed according to the objectives of the survey. A KAP survey can be specially designed to collect information on the issue of, but it is also possible to include general questions on practices and beliefs.

The KAP survey can identify a lack of knowledge, operating procedures or cultural beliefs, thereby enhancing understanding and action targeting stumbling blocks in the reduction of hypertensive cases. In a way, this survey can highlight factors which influence HTN and also the reasons behind certain attitudes, reasons and methods behind certain practices relating to HTN. These networks are vital for the preparation and dissemination of prevention messages. KAP studies are used to identify needs and problems and can also provide solutions to improve the quality and accessibility of HTN.

1.11.1 KNOWLEDGE:

The knowledge questionnaire assesses the knowledge and understanding of the patient regarding the hypertension in the patient was asked with questions mentioned and the responses were recorded as score 1 if the patient gives correct answer and if the patient gives wrong answers score as 0 and the percentage can be made at the end to know what percent of the sample population had the correct knowledge regarding the disease.

S.NO.	QUESTIONS	SCORE
1	Do you know hypertension is a disease?	
2	What is the normal level of blood pressure?	
3	What are the symptoms of hypertension?	
4	Is the diet rich in salt causing hypertension?	
5	What are the complications of hypertension?	
6	Is aging a risk factor for hypertension?	
7	Is blood pressure heritable?	
8	Is smoking a major cause of hypertension?	

9	Isobesityassociated withhypertension?	
10	Isexercisehavingabeneficialroleinhypertension?	
11	AreAnalgesicdrugsoneoftheriskfactorsforhighblood pressure?	

Table 1.2knowledgequestionnaire

1.11.2 ATTITUDE:

Attitudeinvolvestheassessmentofthepatient'sunderstanding.

S.NO.	QUESTIONS	SCORE
1	Shouldwereducesaltintaketopreventhypertension?	
2	Doyouthinkregularcheckingofyourbloodpressurelevelisimportant?	
3	Shouldwekeepintouchwithphysiciansregularly?	
4	Do youthinkregularmedicationisimportantinhypertension?	
5	Shouldweexerciseregularlyforahealthylife?	
6	Doyouthinkthatexcessalcoholcanworsenthebloodpressure level?	

Table 1.3Attitudequestionnaire

1.11.3 PRACTICE:

Practiceistheoutcome/resultofthecounselling/knowledgeimpartedduetotheKAPquestionnaire tothepatient.

S.NO.	QUESTIONS	SCORE
1	Doyoucheck yourbloodpressureregularly?	
2	Doyouvisityourphysicianregularly?	
3	Doyouuseyouranti-hypertensivedrugsaccordingto physicianorder?	
4	Areyoudoingphysicalexercisetomaintainyourweight?	
5	Areyouavoidingextraaddedsaltinyourdailydiet?	
6	AreyoutakingHealthyDiet?	

Table 1.4Practicequestionnaire

II. AIM AND OBJECTIVES

2.1 Aim of the study:

To perform knowledge, attitude and practice on hypertension in patients at a tertiary care hospital – Across sectional study.

2.2 Objective of the study:

- 1 To study the knowledge, attitude and practice about hypertension in hypertensive patients.
- 2 To describe the level of knowledge on the disease.
- 3 To assess the prevalence of hypertension and to estimate awareness, treatment and adequacy of control of hypertension among the public.
- 4 To assess and explain the knowledge, attitude and practice of risk factors in hypertensive patients.
- 5 To explain its complications and management strategies among hypertensive patients.
- 6 To provide information regarding hypertension to patients.
- 7 To find out the level of knowledge about control of blood pressure among the public.
- 8 The study was conducted by using KAP questionnaires on hypertension.

NEED OF THE STUDY

The prevalence of hypertension has an increasing trend globally. Often a problem of poor medication of anti-hypertensive patient is due to the poor knowledge, attitude and practice of patient regarding their treatment and disease. The status of overall KAP on hypertension among anti-hypertensive users need improvement to reduce the burden. A proper educational intervention is essential on the aspect of dietary habits that would rather improve their practice. Our study also highlights the necessity to focus such intervention related to knowledge, attitude and practice-oriented intervention to all the patient groups. Patient with earlier onset of hypertension might respond to the intervention better. As the patient with hypertension may have inadequate knowledge on the disease, its complications and management strategies, health care providers need to deliver appropriate knowledge to patients with hypertension on control measures, adverse consequences of hypertension and management strategies. There is a need to investigate KAP among general population to aid in future development of programs and techniques for effective health education, KAP surveys are effective in providing baseline for evaluating intervention programmes. This study aims to assess the baseline levels of knowledge, attitude and

practice of general population towards hypertension. In view of this, we selected this topic for the betterment of patient community and to create awareness among hypertensive patients.

EXPECTED OUTCOME

These studies improve patient care and safety in related to disease and use of medicines and promote understanding, education about hypertension and its effective communication to public. These studies maximize the efficiency of hypertension prevention. These studies act as control programs so that delay in achieving effective hypertension control in minimized countries experiencing recent emergence of disease as major problem. There are more opportunities existed for improving the information, education and communication about high blood pressure in health care. These studies increase the knowledge, awareness and control of hypertension and will reduce the mortality and morbidity. The health care providers should motivate and enable the patients to control their blood pressure by giving consistent advice on lifestyle modifications.

III. MATERIALS AND METHODS

- 3.1 **Study site:** This study was conducted at a tertiary care hospital. The patients who visited this hospital were taken into study.
- 3.2 **Study design:** A hospital based cross-sectional study.
- 3.3 **Study size:** A total of 150 patients from the outpatient department of neurology. Those who fulfilled the inclusion criteria were selected for the study.
- 3.4 **Study period:** The study was conducted for a period of 6 months.
- 3.5 **Study criteria:** The study was carried out by considering following criteria:

3.5.1 Inclusion criteria:

- 3.5.1.1 All the persons who have been diagnosed with hypertension regardless, whether they are taking anti-hypertensive medications or not.
- 3.5.1.2 Both genders are included.
- 3.5.1.3 Hypertensive patients who are willing to participate in the study.
- 3.5.1.4 Hypertensive patients who are with or without co morbid conditions and who give

verbal consent to participate in the study.

3.5.2 Exclusion criteria:

3.5.2.1 Patients who are not fully alert or those who have psychological problems are excluded.

3.5.2.2 Pregnant and lactating women are excluded.

3.5.2.3 Patients who are not willing to participate in the study.

3.6 **Ethical approval:** This study was approved by the institutional ethics committee of Narasaraopeta institution of pharmaceutical sciences, Narasaraopeta.

3.7 **Source of data:** The patient's demographic data and various relevant necessary data were obtained every day from the medical records and relevant data of KAP questionnaires are documented.

3.8 **Data handling and management:** Data collection form is enclosed. MS Excel format will be used for collecting data. Strict privacy and confidentiality are maintained during data collection.

3.9 **Study procedure:** All the patients who attended the department of neurology were reviewed daily to collect KAP questionnaires. Those patients whom the study criteria

were enrolled into the study. A suitable data collection form was designed to collect all the necessary and relevant information.

The demographic details of the patient such as name, age, gender, locality, literacy and other relevant details were collected by reviewing the case sheets and by interviewing the patients. Social histories of the patients were also taken by interviewing the patients.

The patient's knowledge, attitude and practices regarding hypertension were assessed using the self-designed KAP Questionnaire provided in the Review-1. In the Review-2, the same KAP Questionnaire was taken from the patient.

3.10 **Statistical analysis:** Demographic characteristics, KAP scores are summarized using descriptive statistics. Frequencies, averages/means, medians, standard deviations and percentages were obtained using Graph pad prism statistical software.

IV. RESULTS

The present cross-sectional study was done at a tertiary care hospital for a period of 6 months. Total 150 cases were collected and analyzed in Hypertensive patients.

4.1 Gender based distribution:

Gender	No. of persons	Percentage (%)
Males	64	42.6%
Females	86	57.3%

Table 5.1 Gender based distribution

The above table shows the gender based distribution of patients. Among them males were 42.6% (n=64) and females were 57.3% (n=86). Hypertension was mainly observed in females than males.

The age-based distribution of patients shows that highly affected patients are between the age group of 51-60 years with 24.6% and the less likely affected in the age group of 81-90 years with 5.3%.

4.2 Age based distribution:

4.3 Literacy based distribution:

Literacy status	No. of persons	Percentage (%)
Literate	50	33.3%
Illiterate	100	66.6%

Table 5.3 Literacy based distribution.

The above table indicates the literacy-based distribution of patients shows that illiterate people 66.6% (n=100) more than literate people 33.3% (n=50).

4.4 category-based distribution:

Types of Hypertension	Percentage (%)
Systemic hypertension	95.3%
Malignant hypertension	3.3%
Pulmonary hypertension	1.3%

Table 5.4 Category based distribution.

The above table of the category-based distribution of hypertension shows that 95.3% of the population were having systemic related hypertension, 3.3% having malignant hypertension and 1.3% having pulmonary hypertension.



Figure 5.4 Study of category-based distribution.

4.5 Duration of disease-based distribution:

Duration of disease	Percentage (%)
<1 year	21.3%
1-5 years	44.6%
6-10 years	24.6%
>10 years	9.3%

Table 5.5 Duration of disease-based distribution.

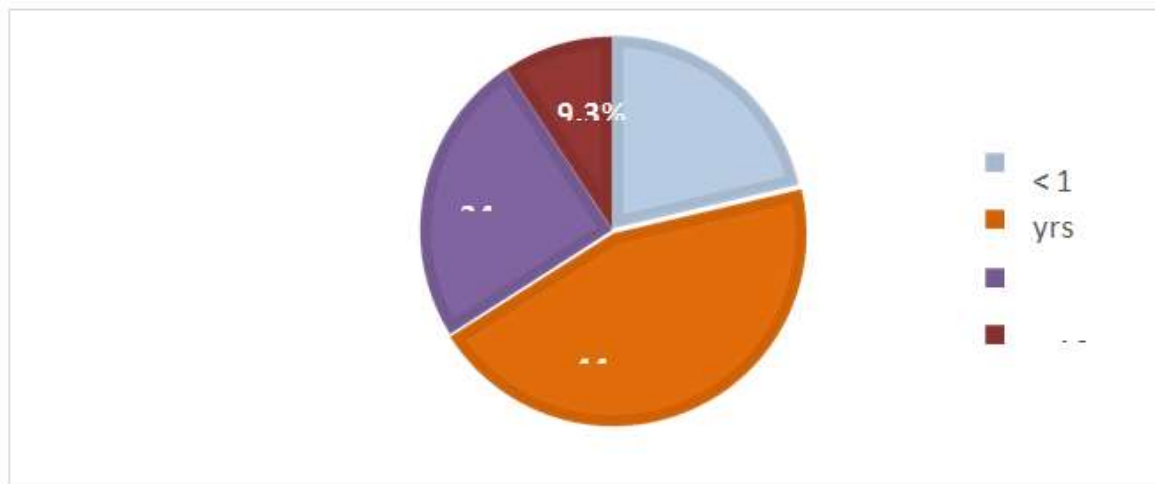


Figure 5.5 study of duration of disease-based distribution.

4.6 Level of overall KAP included subjects in review 1:

Category	Knowledge	Attitude	Practice
Percentage	32.5%	35.9%	39.2%

Table 5.9 Overall response to KAP in review-1.

The above table indicates the overall first review of KAP questionnaire reveals that patients are more aware with the practice (39.2%) then attitude (35.9%) followed by knowledge (32.5%).

4.7 Level of overall KAP of included subjects in review-2:

Category	Knowledge	Attitude	Practice
Percentage (%)	38.3%	39.3%	42.9%

Table 5.13 Overall response to KAP in review-2.

The above table indicates the overall second review of the KAP questionnaire reveals that patients are more aware with practice (42.9%) then attitude (39.3%) followed by knowledge (38.8%).



Figure 5.13 Overall response to KAP in review-2.

4.8 Knowledge comparison of both review 1 & 2:

Knowledge	Percentage (%)
Review 1	32.5%
Review 2	38.8%

Table 5.14 Knowledge comparison of review 1 & 2.

The above table indicates the comparison of the first and second reviews for Knowledge reveals that the results of the second KAP review was 38.8% and the first KAP review was 32.5%. In which second review has a greater result percentage.

Figure 5.14 Knowledge comparison of review 1 & 2.

4.9 Attitude comparison of both review 1 & 2:

Attitude	Percentage(%)
Review 1	35.9%
Review 2	39.3%

Table 5.15 Attitude comparison of review 1 & 2.

The above table indicates the comparison of review 1 & 2 for attitude shows that the results for the first review was 35.9% and for second review was 39.3% in which the second review has a greater result in percentage.

Figure 5.15 Attitude comparison of review 1 & 2.

4.10 Practice comparison of both review 1 & 2:

Practice	Percentage(%)
Review 1	39.2%
Review 2	42.9%

Table 5.16 Practice comparison of review 1 & 2.

The above table indicates the comparison of the first and second reviews for Practice reveals that the results of the second KAP review was 42.9% and the first KAP review was 39.2%. In which second review has a greater result percentage.

Figure 5.16 Practice comparison of review 1 & 2.

V. DISCUSSION

Our study evaluated the knowledge, attitude, and practice in hypertensive patients regarding hypertension.

A total of 150 consulting patients participated in the study of the corresponding study site hospital. In this study majority of patients are in the age group of 51-60 years (24.6%) and less likely in the age group of 81-90 years (5.3%).

Inclusion criteria were suitable for both male patients and female patients. In gender distribution 42.6% are males and 57.3% are females.

Among 150 patients, the duration of disease based

distribution is as follows: 1-5 years have higher duration of disease. >10 years have a low duration of disease.

Literacy based distribution, literate people are lower (33.3%) than illiterate people (66.6%).

This study, KAP of patients were estimated by giving the scores to the patients in the pre-counselling and post-counselling sessions which were done in the hospital.

In the first review of knowledge, there was moderate knowledge. This condition was due to lack of awareness among patients, patient education, counselling

regarding disease, medication & lifestyle modification.

The second review explains that there was an increment in knowledge towards hypertension. This improvement was obtained due to proper education &

counselling to patients regarding disease & lifestyle modification. Present study believed that age and literacy were associated with a patient's knowledge regarding hypertension. Patients above 50 years of age show more knowledge about the hypertension.^[6]

In the first review of attitude, the attitude towards the regular exercise was poor (33.3%), it was due to lack of knowledge to people that regular exercise can control the blood pressure to some extent. The attitude of people towards regular touch with physicians (38%) was low in review -1. The attitude towards alcohol intake was also low, it was due to the lack of knowledge about the side effects and complications of drinking alcohol.

The second review shows that there was a slight increase in overall attitude towards hypertension. This was due to effective patient counselling on attitude regarding hypertension. In the first review of practice, compared to knowledge and attitude scores practice had a greater score. It is due to that illiterate people majorly follow a good diet and they believe in physician words about usage of medicine and strict use of limited salt. But still the practice score is below average. We additionally provided information about controlling hypertension.

In second review, the practice skill has been slightly improved. From our study were reported that a slight increase in practice was due to providing proper information about hypertension.

VI. CONCLUSION

The prevalence of hypertension has an increasing trend globally. First and foremost, we studied the knowledge, Attitude and Practice in hypertensive patients - across sectional study. In this study a total 150 cases were collected, among 60 to 69 years age groups were higher and easily susceptible to hypertension and females were in large proportion.

In this study we validated the KAP Questionnaire, based on a self-prepared questionnaire which may be easier to apply in outpatients and inpatients. KAP Questionnaire has been shown to be an excellent predictor of Knowledge, Attitude and Practice of hypertension. Many of these KAP studies were conducted earlier on hypertension.

We also underwent study to test the hypothesis. We stated

that Knowledge was improved by 6%, Attitude was improved by 4%, Practice was improved by 3% from first review to second review.

In our study we found that there is a lack of knowledge and attitude compared to the practice. Recommendations of the study was that there is an urgent need for increasing awareness of hypertension. Combined educational and behavioural approach with continuous motivation increases drug compliance. Health professionals must educate hypertensive patients about their disease, their medications and the consequences of non-compliance with treatment.

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