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Research article

Hypertension

An assessment of self-care practice among hypertensive patients on Salem district, Tamil Nadu, India

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ABSTRACT

It was a prospective observational study conducted in the rural area of Salem. A community based observational study. Overall, Six in ten of the surveyed patients seem to have a convincing amount of control over Hypertension. Whereas, four in ten of the patients do not have control over their condition, even though more than fifty percent patients have completed their higher secondary education but they seem to lack behind with all the necessary awareness. Hypertension nowadays have become more common between people, it is highly recommended and important to provide patients awareness related how effective self-care practices can be, by the health care departments. This could lead to better control over Hypertension.

Keyword: Hypertension, Medication adherence, hyperlipidemia, coronary artery disease.

INTRODUCTION

❖ HYPERTENSION is a very common disorder particularly past middle age.

❖ Hypertension is defined as a blood pressure more than 140 mm Hg systolic and 90mm Hg diastolic.^[1]

Blood pressure is the amount of blood pushing against the walls of your arteries. Vessels carry blood from your heart to other parts of your body. Blood pressure naturally rises and falls throughout the day, but if it remains high for a long period of time, it can damage your heart and cause health problems. Hypertension, also known as high blood pressure, is described as blood pressure that is higher than normal.^[2]

Because of the nature of hypertension in today's modern healthy world, the term "silent killer" is relevant. Due to its high prevalence and strong association with cardiovascular disease and premature death, it is the world's most serious public health challenge. Hypertension is described as blood pressure that is high enough to perfuse tissues and organs. A systolic blood pressure of 140 mmHg and a diastolic blood pressure of 90 mmHg are assumed elevated systemic blood

pressure.^[3] It is a significant risk factor for coronary artery disease, cerebrovascular disease, and renal disease.^[4]

Self Care of Hypertension

The World Health Organization encourages self-care activities in the management of high blood pressure. The ability of individuals, families, and communities to promote health and cope with illness and disability with or without the support of a health care provider is defined as self-care. Moreover, self-care is defined as "actions directed toward one or the environment to regulate one's functioning in the interest of one's life, integrated functioning, and well-being". Self-care is multifaceted, and when it happens to come to chronic disease management, adherence is a process of balancing recommended and actual behavior and attitude.^[5]

Co Morbidities of Hypertensive Patients

Hypertension frequently coexists with obesity, diabetes, hyperlipidemia, or the metabolic syndrome; their association with cardiovascular disease is well established. The

identification and management of these risk factors is an important part of the overall management of hypertensive patients. Because patients in these special populations are more predisposed to target organ damage (TOD), stringent targets for blood pressure (BP) control have been set in clinical guidelines.^[6]

METHODOLOGY

Study design

A community based observational study. It was a prospective observational study conducted in the rural area of Salem.

Study population

Individuals diagnosed with hypertension between the age group of 25- 80 years.

Inclusion criteria

- Participants in the age group of 30-70 years.
- Diagnosed with hypertension for at least 6 months and taking at least one antihypertensive drug.

Exclusion criteria

- Participants who could not communicate effectively with the researcher.
- Those who did not provide informed consent.

Data collection process

To collect data from study participants, I used a data collection form. The observational investigation was carried out in Salem. The observational study would include

information on social economic, health-seeking behavior patterns, co-morbidities, and family history. The H-SCALE was employed to capture the self-care pattern (Hypertension Self-Care Activity Level Effects Scale). A panel of experts in public health, epidemiology, and clinical cardiology assessed the modified version of the questionnaire's face and content validity. The local language was used to translate the modified tool (Tamil). For blood pressure and heart rate measurements, used a digital OMRON sphygmomanometer. All measurements and observational studies were carried out after the study participant supplied written informed consent. During the observational study, privacy was maintained, and all information was kept private.

Data collection instruments

The observational study for Participants
It includes 6 sections

Section 1: Sociodemographic details

Age, sex, education level, occupation, marital status

Section 2: Health-seeking behavior

Type of health facility, age at diagnosis, last BP, how often visit a health worker and check BP

Section 3: Co morbidities related details

Section 4: Family history

Section 5: Self-care activities

Section 6: stress

6 domains - Medication adherence, diet, physical activity, smoking, weight management and

Alcohol use which is recommended by JNC 7, assessed by using an adapted Hypertension Self-Care Activity Level Effects Scale (H-SCALE).

The instrument used for physical measurements

Blood pressure and heart rate were measured using a digital sphygmomanometer (OMRON HEM-7121).

RESULT

MEDICATION USAGE

Table 1: Medication usages

S NO	QUESTIONS	YES	NO
1	Take your blood pressure pills?	178	64
2	Take your blood pressure pills at the same time every day?	181	61
3	Take the recommended number of blood pressure pills?	165	77

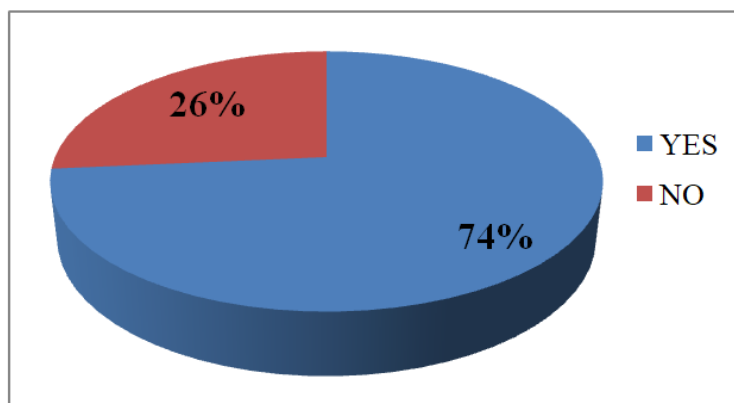


Fig 1: Intake of blood pressure pills

During the study conducted with 242 Hypertensive patients, about 74% of them were already been taking the Blood pressure medications such as tablets. Whereas, the remaining 26% were not aware about how much serious does Hypertension really is.

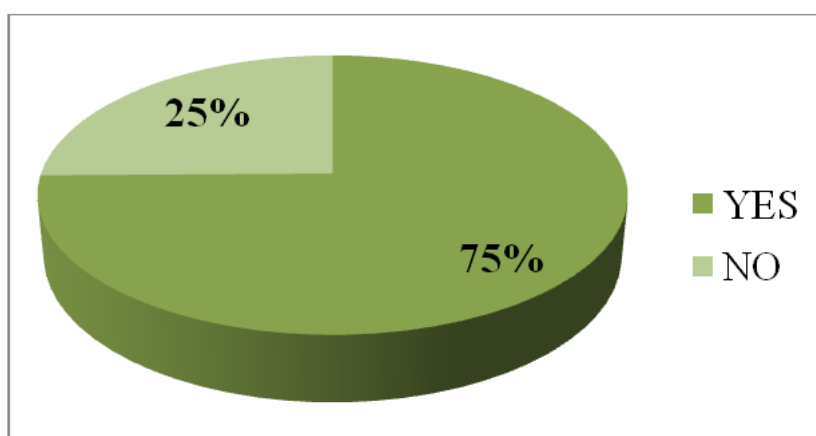


Fig 2: Intake of blood pressure pills at same time everyday

In the 242 Hypertensive patients, 75% of them were said that they follow strict time, ie... they take the medications everyday at the instructed time. Remaining 25% do not follow regular time frame which could be because they aren't instructed properly by the medical practitioner or the pharmacist.

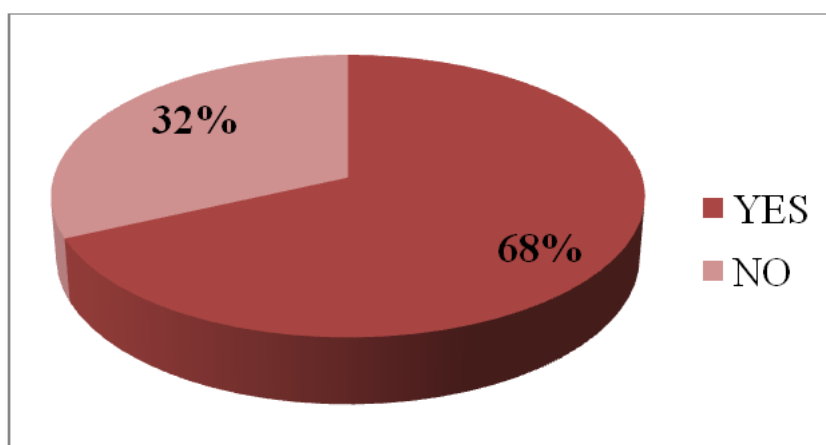


Fig 3: Intake of recommended number of pills

Only about 68% of the studied patients were seemed to take correct and instructed number of Blood pressure pills whereas the remaining 32% take more or less number of Blood pressure pills during administration.

Low- salt diet

Table 2: Low salt diet

S. NO	QUESTIONS	YES	NO
1	Follow a healthy eating plan?	185	57
2	Eat pickles, olives, or other vegetables in brine?	157	85
3	Eat ≥ 5 servings of fruits and vegetables?	159	83
4	Add salt to food when you're cooking?	124	118

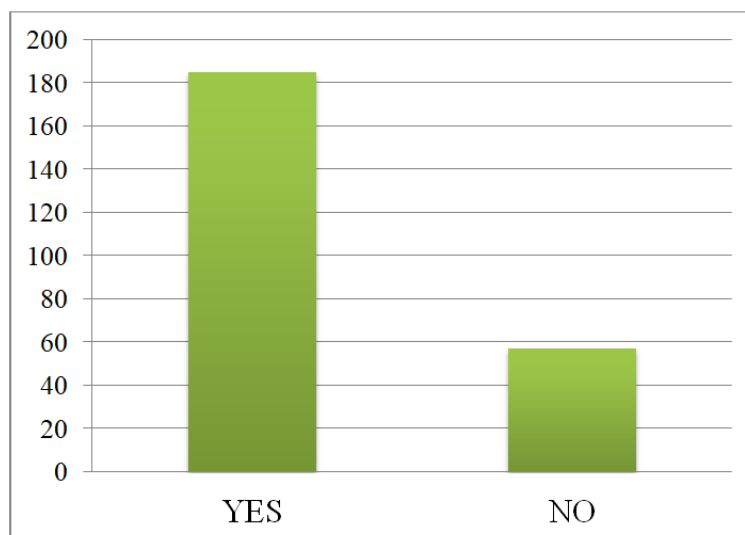


Fig 4: Following of healthy eating plan

In the total 242 patients that were studied, we came to know that only 76% of them were following healthy diet relative to their health condition. But the remaining 24% do not follow a proper diet plan which may be due to their ignorance.

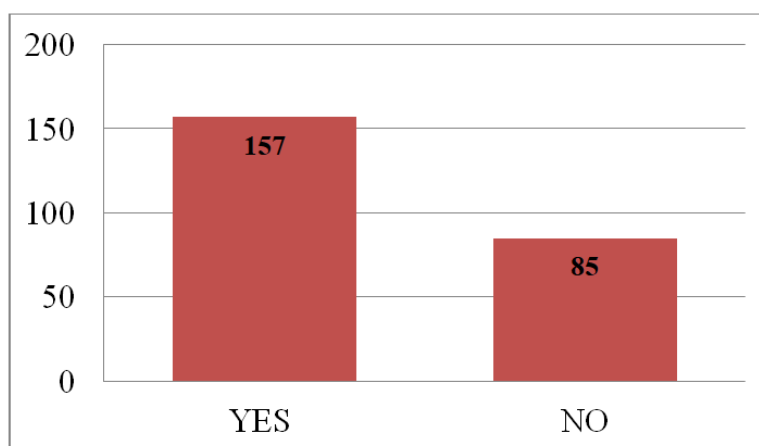


Fig 5: Consumption of pickles, olives and other brine vegetables

Hypertension may easily be controlled by a proper diet plan with less or no salt in it. 65% of the participants are aware about the dietary plan for HTN and still continuing the intake of pickles, olives or vegetables in brine. However the other 35% of participants are not even educated with the proper dietary plan for HTN.

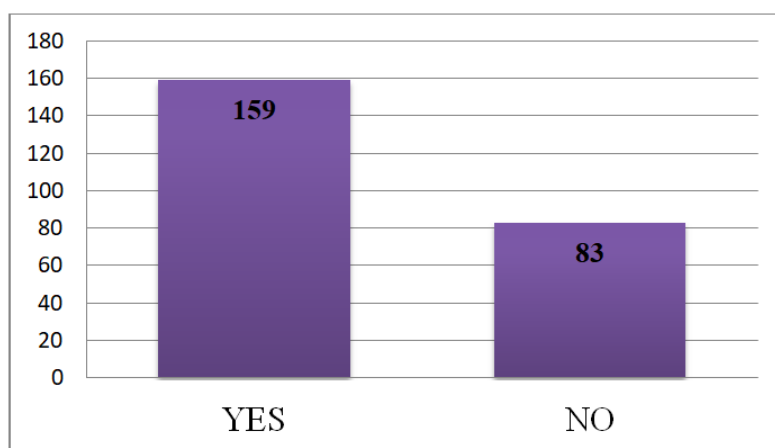


Fig 6: Consumption of fruits and vegetables

When asked about the eating habits of fruits and vegetables regularly, only 66% were eating fruits and vegetables to make them healthy. Whereas, the other 34% do not eat fruits and vegetables regularly, rather they eat them irregularly or rarely.

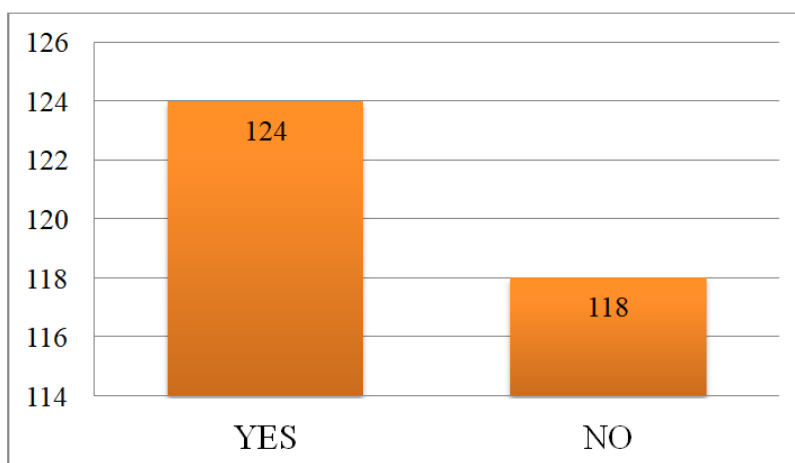


Fig 7: Low salt diet

Eating food by adding extra salt will have a greater risk for HTN and when this is asked to the Hypertensive patients, only 49% of the participants were eating their daily food with less amount salt. And 51% of participants use extra salt in their daily food style.

Physical Activity

Moderate activities: home maintenance, maintenance of cattle, fetching water, carrying wood, cooking, washing clothes, others

Vigorous activities: Agricultural work, Digging, Breaking stone, bicycle, carpentry work/ masonry work, others.

Table 3: Physical Activities

S NO	QUESTIONS	YES	NO
1	Do at least 30 minutes total of physical activity	74	168
2	Do you have a specific exercise activity (such as swimming, walking, or biking) other than what you do around the house or as part of your work?	159	83

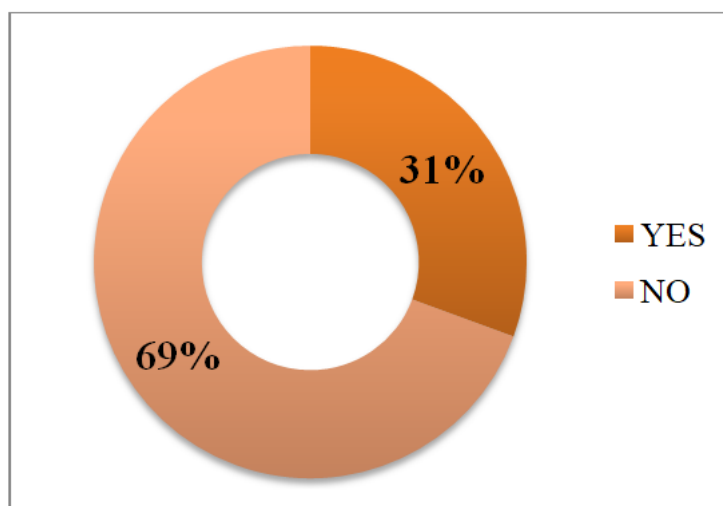


Fig 8: Regular physical activities for 30+ minutes

Every HTN patients are advised to do at least 30 minutes of daily physical activity such as household works and when the patients were asked if they do it, only about 31% said that

they do physical activity daily for at least 30 minutes. Whereas, the other 69% said that they don't do any physical activity.

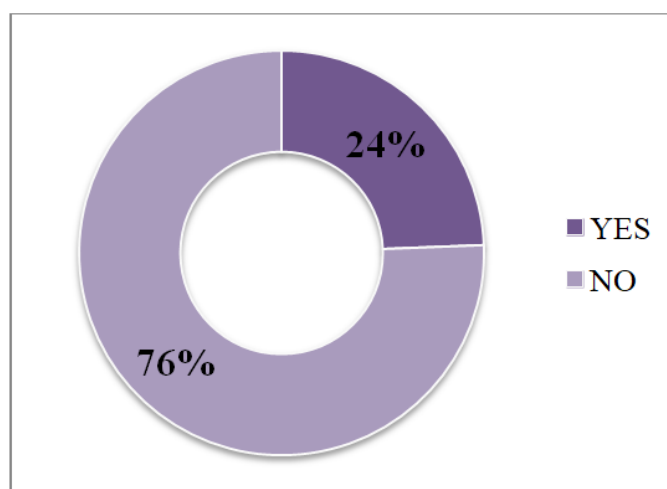


Fig 9: Specific exercises other than general house hold works

When the patients were asked about specific exercises which can make them physically fit other than just the physical activities like household works, only about 24% of

participants follow specific exercise and the remaining 76% of participants fails to perform the exercise.

Weight management

Table 4: Weight Management

S NO	QUESTIONS	YES	NO
1	I am careful about what I eat.	197	45
2	I exercise in order to lose or maintain weight	59	183
3	I have stopped buying or bringing unhealthy foods into my home.	185	57
4	I have modified my recipes in the intention of weight management	133	109

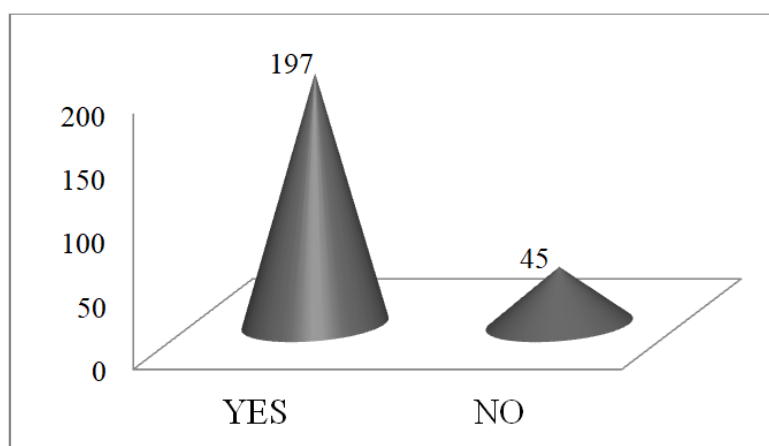


Fig 10: Aware of what they eat

When the patients were asked if they are conscious about what they eat in order to manage their body weight, about 81% of them said “Yes” they eat less fatty food to avoid unwanted weight gain. The remaining 19% said that they are not aware about their diet.

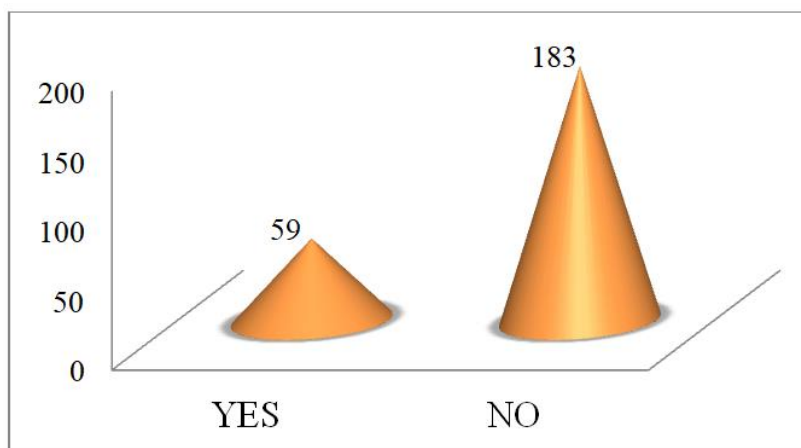


Fig 11: Exercise to lose or maintain body weight

When the patients were questioned about physical exercises to lose or maintain their body weight, only 24% of patients maintain a normal body weight by performing regular exercise and the remaining 76% do not follow any exercises.

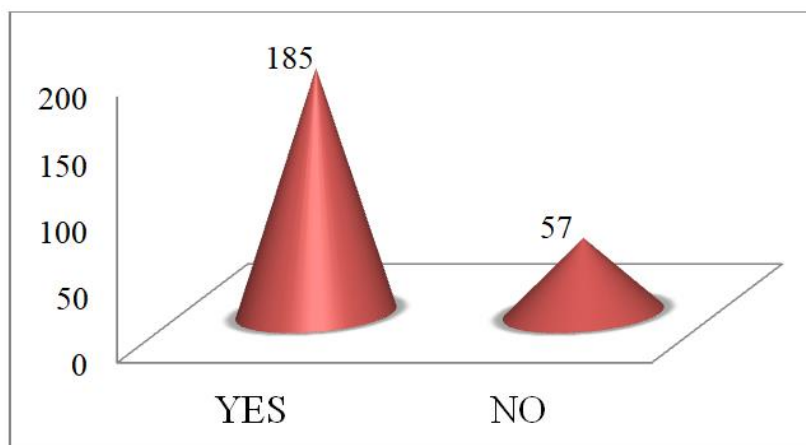


Fig 12: stopped buying or bringing unhealthy food to the house

Eating unhealthy or junk foods could worsen hypertensive condition and when the patients were asked did they stopped bringing unhealthy or junk foods to their home, about 76%

said that they did stop it. But the remaining 24% said that they bring unhealthy foods to their home

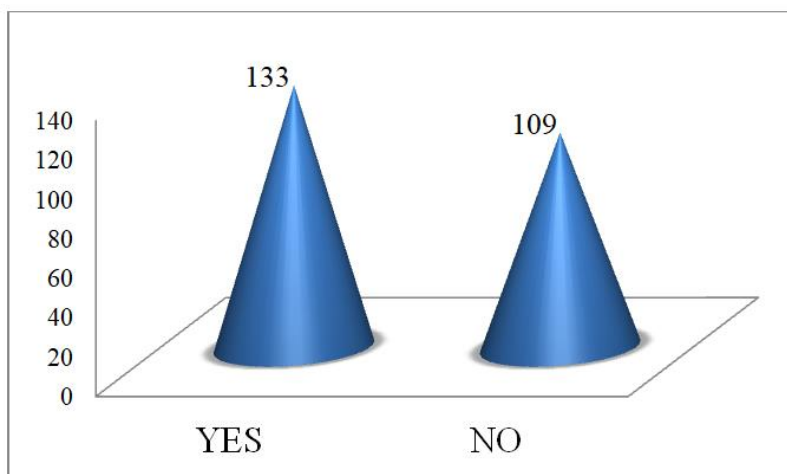


Fig 13: Diet in the intention of body weight management

When the patients were asked about their dietary plan in such a way that it helps in their weight management, about 55% of participants said that they follow a proper diet but the remaining 45% said that they didn't follow.

Alcohol consumption

Table 5: Alcohol Consumption

S NO	QUESTION	YES	NO
1	Do you drink alcohol?	76	166

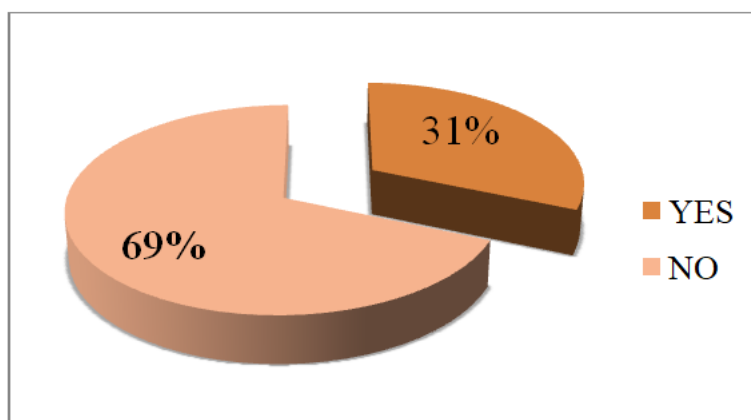


Fig 14: Consumption of alcohol

When the patients were asked, about the consumption of alcohol about 31% said that they do consume alcohol despite their condition. The remaining 69% said that they don't consume alcohol.

Smoking

Table 6: Smoking habits

S NO	QUESTION	YES	NO
1	Do you smoke?	87	155

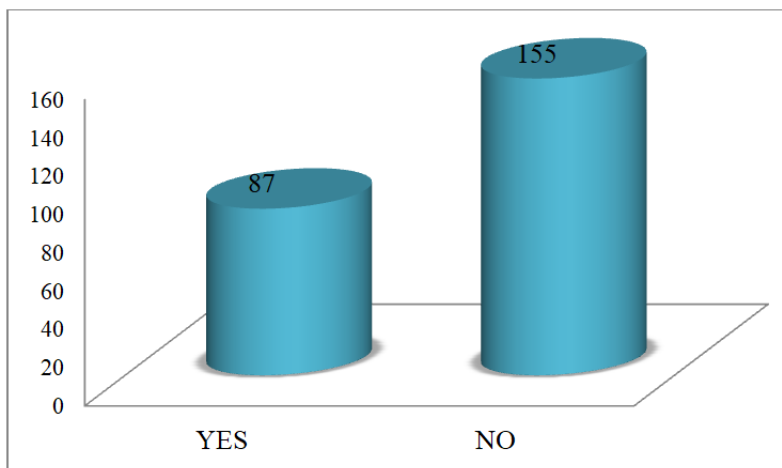


Fig 15: Smoking and non-smoking patients

When the patients were questioned about their smoking habits, about 36% of the patients said that they do smoke but the remaining 64% were non-smokers.

Co morbidities

Table 7: Co morbidities

S NO	YES	NO
1	62	180

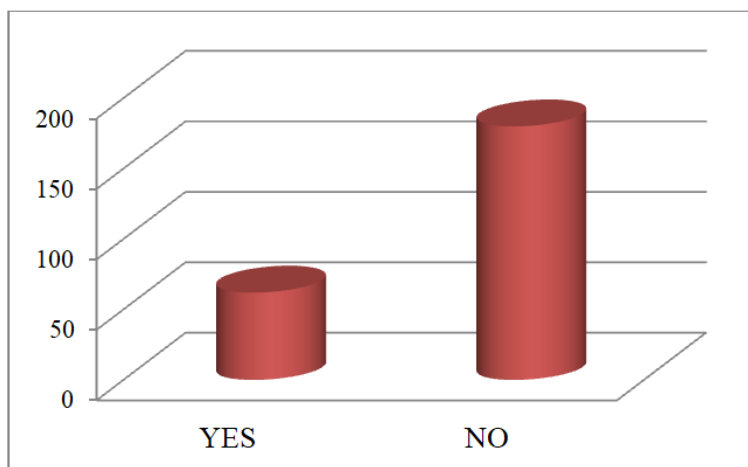


Fig 16: Presence of co-morbidities

The patients were also asked if they have any other morbidity along with Hypertension, about 26% of the patients said “Yes” and the remaining 74% said “No”.

Family history

Table 8: Family histories of hypertension

S NO	YES	NO
1	122	120

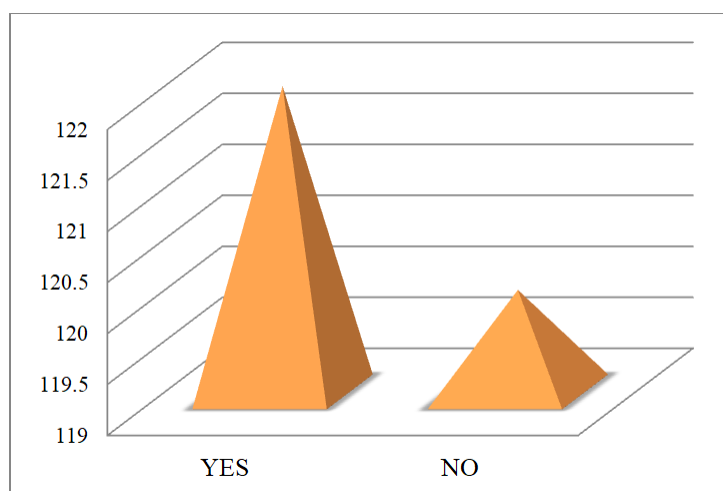


Fig 17: Family health histories of the patients.

When the patients were asked about if anyone of their family had Hypertension predominantly before them, about half of the patients said “Yes” which 50% is and the remaining 50% of the patients said “No”

Cohen perceived stress scale

Table 8: Cohen perceived stress scale

S NO	QUESTIONS	YES	NO
1	In the last month, how often you have been upset because of something that happened unexpectedly?	174	68
2	In the last month, how often have you been unable to control the important things in your life?	113	129
3	In the last month, how often you felt nervous and stressed?	187	55
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	178	64
5	In the last month, how often have you felt that things were going your way?	142	100
6	In the last month, how often have you found that you could not cope with all the things that you have to do?	137	105
7	In the last month, how often have you been able to control irritations in your life?	164	78
8	In the last month, how often have you felt that you were on top of things?	87	155
9	In the last month, how often have you angered because of things that were outside of your control?	165	77
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	146	96

Stress

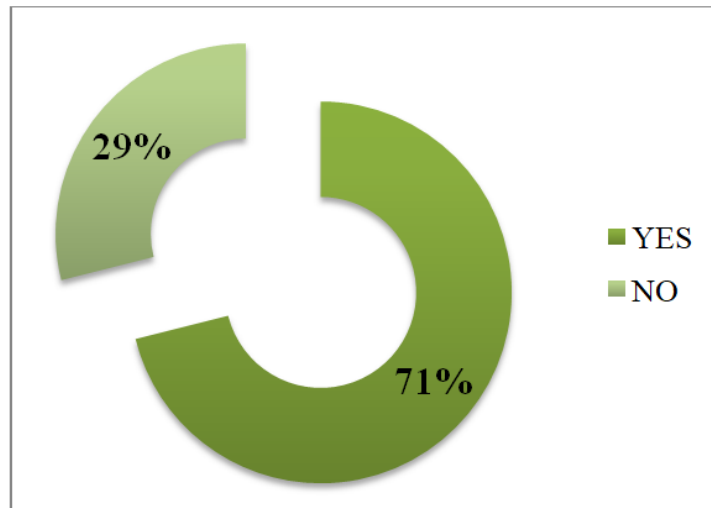


Fig 18: Stressed patients

Often mental stress has been proven to be a main risk factor for HTN in this study 71% of the participants are stressed due to their work, family, etc... whereas the other 29% said that they don't feel stressed.

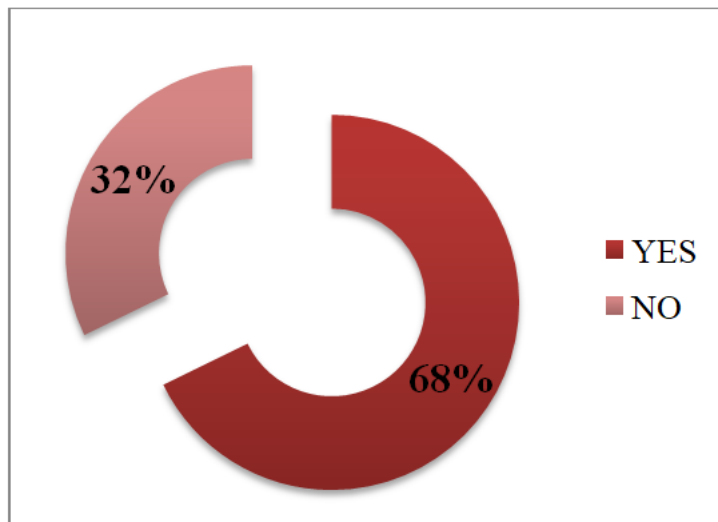


Fig 19: Stress Management

When the patients were asked if they could cope up or deal with the stress or the mental irritations, 68% said that they are able to deal with their mental stress.

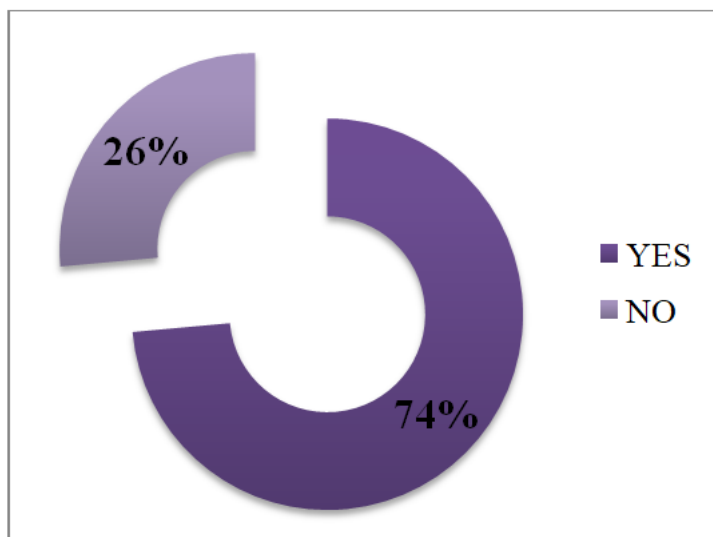


Fig 20: overcoming of personal problems

Having mental stress will lead to the inability to overcome or solve personal problems. So, when the patients asked about if they are able overcome or solve whatever personal problems they have, about 74% said that they could deal with the problems they face. But the other 26% said that they are not able to overcome the problems that they have or face.

Gender

Table 9: percentage of Gender among hypertensive patients

S.NO	GENDER	PERCENTAGE
1	Male	59%
2	Female	41%

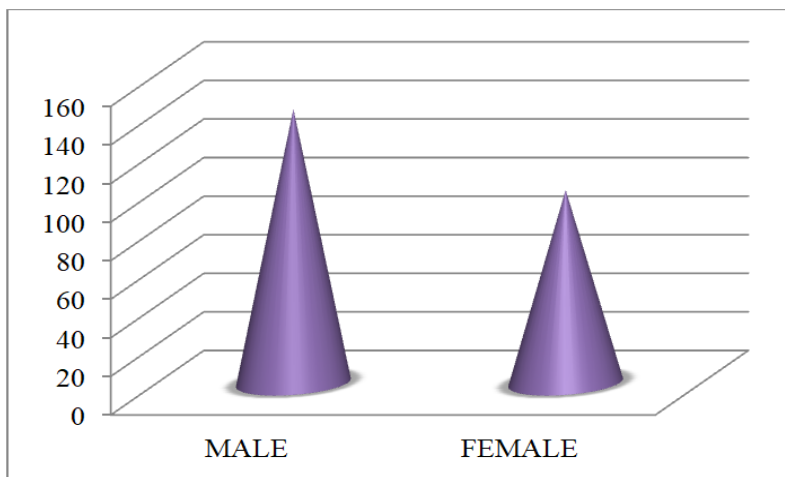


Fig 21: Gender of the patients

When the patients are segregated according to their gender, about 59% were Male and 41% were female.

Age

Table 10: Age category of hypertensive patients

S.NO	AGE CATEGORY	PERCENTAGE
1	10-30	7%
2	30-40	21%
3	40-50	23%
4	50-60	23%
5	60-70	17%

6	70-80	6%
7	80-90	3%

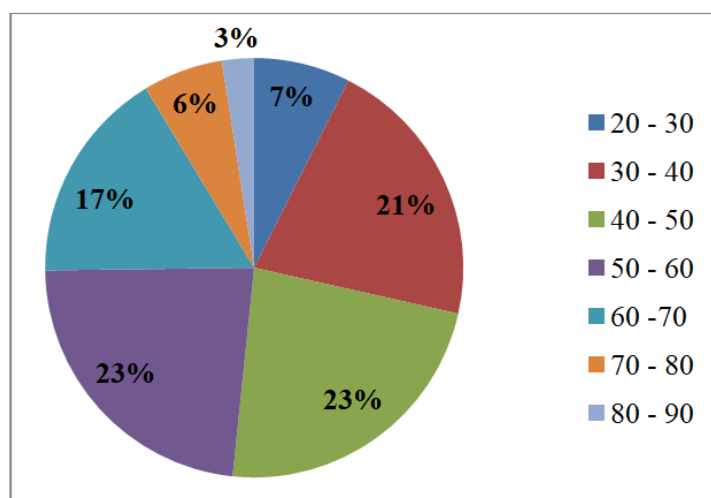


Fig 22: Age category of the patients

Totally 242 patients were studied and when segregated in separate age groups of 20-30, 30-40 and all the way up to 90 years of age, about 46% of them belonged to the age group of 40-50 and 50-60 with 23% each. The patients belonging to

the age group of 30-40 and 60-70 are the second most with Hypertension at 21% and 17%, respectively. The remaining 7%, 6% and 3% of the studied patients belong to the age group of 20-30, 70-80 and 80-90, respectively.

Educational level

Table 11: percentage of educational level among hypertensive patients

SNO	EDUCATION LEVEL	PERCENTAGE
1	I-XII	59%
2	Graduate	18%
3	Nil	23%

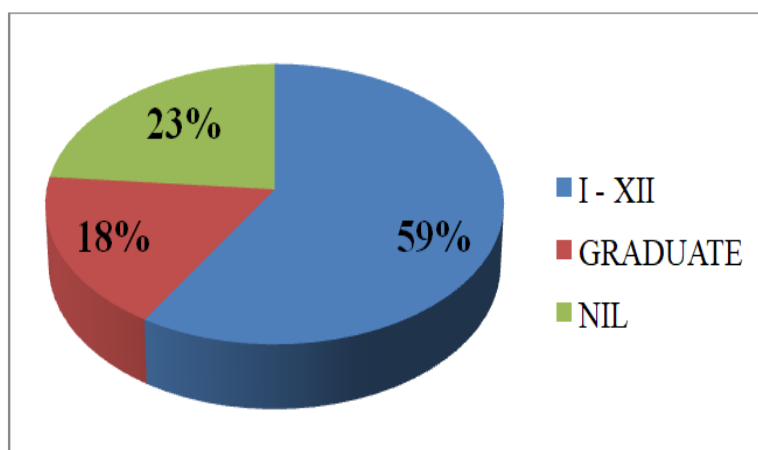


Fig 23: Education of the patients

When the patients are segregated according to their education level, 59% of them were known to have studied 1-12th. Whereas, 18% of them are graduated and the remaining 23% are not educated not even at the smallest level.

DISCUSSION

In our current study of 242 hypertensive patients, most of them were in the age group of 40-50 years (23%) and 50-60

years (23%), 30-40 years (21%) and followed by 60-70 years of age, i.e. 17% and the least were in the category of 20-30 years i.e. 7%. However in the study conducted by Chiazor et al., reveals that the largest number of respondents fell in the age group of 50-59 (71%)⁽⁷⁾. Moreover the study of Abed et al.,

considering all the criteria of age, sex and marital status, the majority of participants were at age group of 40–49 years (28%) and about 68% were at age above 50. The hypertensive patients in our study mostly fall on the gender category of Male (59%) than Female (41%). Similar findings were found from the study guided under Hamidreza et al., about 54.1% were Male participants.^[8]

This study showed equal statistics on analysis of influence of family history on Hypertension disease prevalence i.e. about 50% of total population had influence on disease whereas the other 50% of total population had no influence on disease. This finding is also supported by the study conducted at Sri Lanka which concluded that the prevalence of hypertension in those with a family history was significantly higher in each generations than in those without a family history.^[9] Among the current study population, common co morbidities of hypertensive patients were found to be diabetes, asthma, heart failure and obesity. Similarly the study conducted by Korea National Health and Nutrition Examination Survey revealed that the most common co morbidities were obesity, dyslipidemia, and impaired fasting glucose. Hypertensive patients with two or more co morbid diseases were 42.2% and those with three or more diseases were 17.7 %.^[10]

In the study, the medication adherence among the Hypertensive patients was found to be 72.3% prevalently which is similar to the results of another study that revealed the Medication adherence of 62.71% but this in comparison is very less than the study that was conducted in Uganda (79.5%)^[11] and Saudi Arabia (83.7%).^[12] From this we come to know that the difference between health perception and governance of hypertension within the study participants could also be one of the reasons for the discrepancy of Medication adherence among different patients belonging to different geographical locations. The study participants that are included in our study were of age group of 20-90 years. The age group for the study may change between studies which also account for the discrepancies and the differences between Medication adherences.

Adhering with low-salt diet is as important as the Medication adherence. Eating food with less or no salt is highly beneficial to the hypertensive patients with their condition. During the study we come to know that 64.5% of the study participants do follow a strict low-salt diet. This is similar to the results of the study that was previously done in Kenya (63%)^[13]. But the results of the study done in Uganda and Saudi Arabia are 75.6%^[11] and 79.3%^[12], respectively which are comparatively higher than the results of our study. This difference may be due to the dietary habits of different populations.

In this study, only about 51% of the participants revealed that they do at least 30 minutes of physical activity daily. The reason behind this question being raised to the hypertensive patients is that, it is proven and there are ample amount of research works providing clear evidence on the positive effects of physical activity on hypertension. The physical activity or exercise does aid with hypertension by reducing vascular resistance. Therefore, it is important to educate the

hypertensive patients about the positive effects of physical activity.

Hypertension may also lead to increase in weight of the patients uncontrollably even without any high fatty diets. Increased weight then leads to obesity which is one of the most common causes for hypertension. Hence, it is very crucial for a hypertensive patient to manage or look after their weight. In the study we carried out, about 59% of the study participants are weight conscious. In order to manage weight they are advised by their medical practitioner to do physical activities which can reduce their body weight. Losing one kilogram of body weight is capable of reducing one millimeter mercury of blood pressure (mmHg). The result of our study is similar to the results of study conducted in Saudi Arabia (59.9%)^[12] and Korea (51.28%).^[14] This is much higher than the results of the study which was conducted in China (34.8%)^[15] Because China is one of the countries with most obese citizens.

Alcohol consumption and smoking is one of the major causes for so many diseases including hypertension. In the 242 studied hypertensive patients, about 26% of them are chronic alcohol consumers while the remaining 74% are non-alcohol consumers.

The percentage of alcohol abstinence in our study is less than the study that carried out in China (77.5%)^[15] And higher than that of the study conducted in Uganda (90.1%).^[11]

Smoking is another major cause for hypertension. This is due to the constriction of blood vessels, hence the blood pressure increases. So, one should stop smoking also to control hypertension. About 36% of the study participants said that they were smokers and remaining 64% were non smokers. This in comparison with the study conducted in the region of Uganda which revealed smoking abstinence in their study population was 98.7%.^[11] The difference is larger in comparison which might be due to socioeconomic difference. Psychological distress is known to lead to hypertension easily. In our study, 71% of the study population revealed that they mentally stressed due to various reasons. This is nearly double the percentage in a study conducted in Iran (34.1%).^[16]

CONCLUSION

Hereby we declare that adherence self-care practices are “Good” among the surveyed hypertensive patients in the district of Salem, Tamil Nadu. Overall, Six in ten of the surveyed patients seem to have a convincing amount of control over hypertension. Whereas, four in ten of the patients do not have control over their condition, even though more than fifty percent patients have completed their higher secondary education but they seem to lack behind with all the necessary awareness. Hypertension nowadays have become more common between people, it is highly recommended and important to provide patients awareness related how effective self-care practices can be, by the health care departments. This could lead to better control over hypertension.

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