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**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1442376>Available online at: <http://www.iajps.com>**Research Article****PERCEPTION AND PRACTICE OF HYPERTENSIVE PATIENTS AND  
IMPACT OF PATIENT COUNSELING ON LIFESTYLE  
MODIFICATIONS IN MANAGEMENT OF HYPERTENSION, AMONG  
RURAL POPULATIONS OF SALEM DISTRICT****Mohamed Yasir Arafath<sup>\*1</sup>, R.Shankar<sup>2</sup>, Jamine Anna James<sup>3</sup>,  
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Medical College & Hospitals, Salem, Tamilnadu, India.<sup>3</sup>V Year Pharm.D Students, Vinayaka mission's College of Pharmacy, Yercaud Main Road,  
Kondappanaickenpatty, Salem, Tamilnadu, India.**Abstract:**

*The objective of the study is to assess the perception and practice of hypertensive patients and impact of patient counselling on lifestyle modifications in management of hypertension, among rural populations of Salem district. The prospective study was conducted in Hypertensive patients residing at Kondappanaickenpatty village of Salem district for a period of six months. The data was collected from the Hypertensive patients including their demographic details, using standard questionnaires and then the patient counseling was provided with the aid of pamphlet prepared in their local language and then after a period of 1 month time interval, patient's awareness and practice were reassessed using the questionnaires and Blood pressure values. Out of 100 patients, 47% comprised of male patients and 53% were female patients. The body mass index of study population revealed that majority of the patient was overweight (44%) and only 21 % of patients have normal BMI. 28% of the patients was obese. This result indicates the inadequate practice of lifestyle modification among the patients. At the beginning of the study the mean systolic blood pressure and mean diastolic blood pressure of the study population was found to be 141.3 mmHg and 88.9 mmHg respectively. At the end of the study the mean blood pressure level was controlled. Mean systolic blood pressure was reduced by 2.6 mmHg (138.7 mmHg) and Mean diastolic blood pressure was reduced by 2.4 mmHg (86.5 mmHg). This results indicates effective counselling about the disease and proper education on the role of lifestyle modification in management of the hypertension, will help in the effective control of blood pressure within the normal ranges, thus the quality of life among the hypertensive patients in these rural areas could be improved.***Keywords:** Hypertension, Perception, Knowledge, Practice, Lifestyle Modification, Patient Counselling.

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**INTRODUCTION:**

Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure. Hypertension defined as a systolic blood pressure equal to or above 140 mmHg and/or diastolic blood pressure equal to or above 90 mmHg. Behaviour and lifestyle-related factors can put people at a higher risk for developing high blood pressure [1]. High blood pressure is very common. One out of three adults in the South-East Asia Region is affected by high blood pressure. It is the leading risk factor for mortality claiming nearly 1.5 million lives each year in the Region. High blood pressure is increasing in the Region due to rapid urbanization and globalization leading to adoption of unhealthy lifestyles. Many people in the Region are unaware that they have high blood pressure and remain undiagnosed. Even the majority of those who are diagnosed do not get treated to control the blood pressure. Undiagnosed and uncontrolled blood pressure leads to heart attack, stroke as well as kidney and eye damage. Early death, disability, loss of income, and medical care expenditures due to high blood pressure, all take their toll on families, communities and national budgets. The loss is often long term or lifelong in the case of complications of high blood pressure, pushes millions of people into poverty[2]. A survey of 26,000 adults in South India showed a hypertension prevalence of 20% (men 23% and women 17%) but 67% of those with hypertension was unaware of their diagnosis. Majority of hypertensive subjects still remain undetected and the control of hypertension is also inadequate. This calls for urgent prevention and control measures for hypertension [3].

**Patient counselling**

Patient counselling may be defined as providing medication information orally or in written form to the patients or their representative or providing proper directions of use, advice on side effects, storage, diet and life style modifications. It involves interaction between pharmacist and a patient and/or a care giver. It is interactive in nature. The management of hypertension requires non-pharmacological as well as pharmacological methods. Non-pharmacological and pharmacological benefits can be achieved through the patients understanding of disease, medications & lifestyle modification, when the pharmacist provides them practical information via counselling. Pharmacists can contribute to positive outcomes by educating and counselling patients to prepare and motivate them to follow their Pharmacotherapeutic regimens and monitoring plans [4].

A healthy lifestyle remains the cornerstone of the management of hypertension at all levels of the disease. A healthy lifestyle decreases blood pressure, enhances antihypertensive drug efficacy and decreases total cardiovascular risks [5]. Their strategy for a healthy lifestyle is supported and includes mainly the following elements:

- Achieve and maintain ideal weight with a body mass index (BMI) between 18.5 and 24.9 kg/m<sup>2</sup> by means of limiting caloric intake and increasing daily physical activity.
- Limit total sodium intake to less than 2400 mg per day (Less than one teaspoon of salt per day).
- Stop or if not possible, limit alcohol intake to two standard drinks per day for men and one standard drink per day for women. A standard drink contains about 10 g of ethanol (e.g. 25ml spirits, 125ml wine, 340ml beer)
- Follow the World Health Organization nutrition guidelines. These guidelines emphasize a diet (DASH diet) low in total fat with high intake of fruit and vegetables, regular use of low fat dairy products, a high intake of fibre containing wholegrain foods, fish rather than red meat, the use of products low in saturated fat, low salt, and sparing use of sugar and sugar-containing foods. Intake of beverages with high caffeine levels should be avoided.
- Regular moderate to intensity exercise for at least 30 minutes on most or preferably all days of the week.
- Stop the use of all tobacco products, including snuff [6].

**MATERIALS AND METHODS:**

A Prospective study was conducted in 100 Hypertensive patients residing at Kondapanaickenpatty village of Salem district for duration of 6 months. Patient inclusion criteria included the Patients with hypertension for at least more than one year, Patients above 18 years old from both gender and Patients with co-morbidities and other chronic diseases were also included in the study, e.g. diabetes mellitus, osteoarthritis, HIV, etc. Patient exclusion criteria were Paediatric patients, Patients unable to give informed consent, Patients with mental illnesses leading to confusion were excluded from participating in the study, e.g. delirium, dementia, psychosis, schizophrenia etc.

The data was collected from the Hypertensive patients including their demographic details, using standard questionnaires and then the patient counseling was provided with the aid of pamphlet

prepared in their local language and then, after a period of 1 month time interval patient's awareness and practice were reassessed using the questionnaires and Blood pressure values. Informed consent was obtained from the patients undergoing the study, after providing all the required information of the study in their local language. The study was approved by the institution ethical committee of VMKVMC&H, Salem. The data collected from the hypertensive patients through designed proforma were assessed. A separate data entry form was designed. The proforma format has been designed to collect the demographic details and other relevant details.

## RESULTS AND DISCUSSION:

A prospective study was done to analyze the Perception and practice of hypertensive patients and impact of patient counselling on lifestyle modifications in management of hypertension among 100 hypertensive patients in the rural area of kondapanaickenpatty, Salem.

The 100 hypertensive cases were collected from kondapanaickenpatty, Salem, which was classified according to gender. Out of 100 patients, 47% comprised of male patients and 53% were female patients. The age wise distribution was made for the patients with different age groups such as 30-50, 51-70 and 70 above, the number of patients present in each age group was 42% (22 males and 20 females), 47% (19 males and 28 females) and 11% (6 males and 5 females) respectively. The maximum number of the patients was from age group of 51-70.

The Educational status indicated majority of patients were illiterate (59%). 24% had primary education and only 4% had tertiary education. Major population of patients were homemakers. Only 35% of the patients

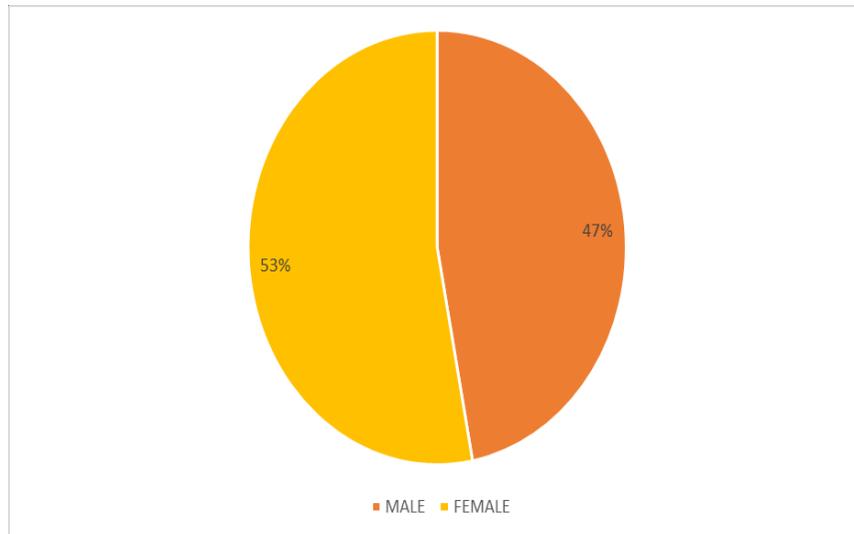
had full time job and 11% of the patients in the study population was retired ones. The body mass index of study population revealed that majority of the patient was overweight (44%) and only 21 % of patients has normal BMI. 28% of the patients were obese. This result indicates the inadequate practice of lifestyle modification among the patients. Out of 72 patients with BMI above 25 kg/m<sup>2</sup>, 57 patients have the blood pressure above the normal level, which implies the need of controlling their BMI within the normal limits. These results indicate the direct impact of weight on Blood pressure levels.

In the study on assessing the knowledge and awareness of hypertension and need of lifestyle modification for the effective management of hypertension among the study population, their awareness and knowledge has been substantially increased after the counselling. Majority of patients (43%) were hypertensive for 1-5 years and 37 % for about 6-10 years, while 20% has hypertension for more than 10 years and above. The percentage of patients who go to the government hospital for the review of their disease and filling their medications was less. Majority of the patients (97%) went to private hospitals for their review. Most of the patient's (59%) blood pressure level was better when compared to last one year and 28% patient's blood pressure remained same, 11 % patients didn't know about blood pressure level and only 2% patient's blood pressure has become worse when compared to last one year. Medical professionals can contribute to positive outcomes by educating and counselling patients and motivate them to follow their pharmacotherapeutic regimens as well as lifestyle modifications. Only 31% of the patients were advised by the medical professional about the need of the lifestyle modification. Most of the patients (82%) were not following those lifestyle modifications regularly.

## DEMOGRAPHIC DETAILS

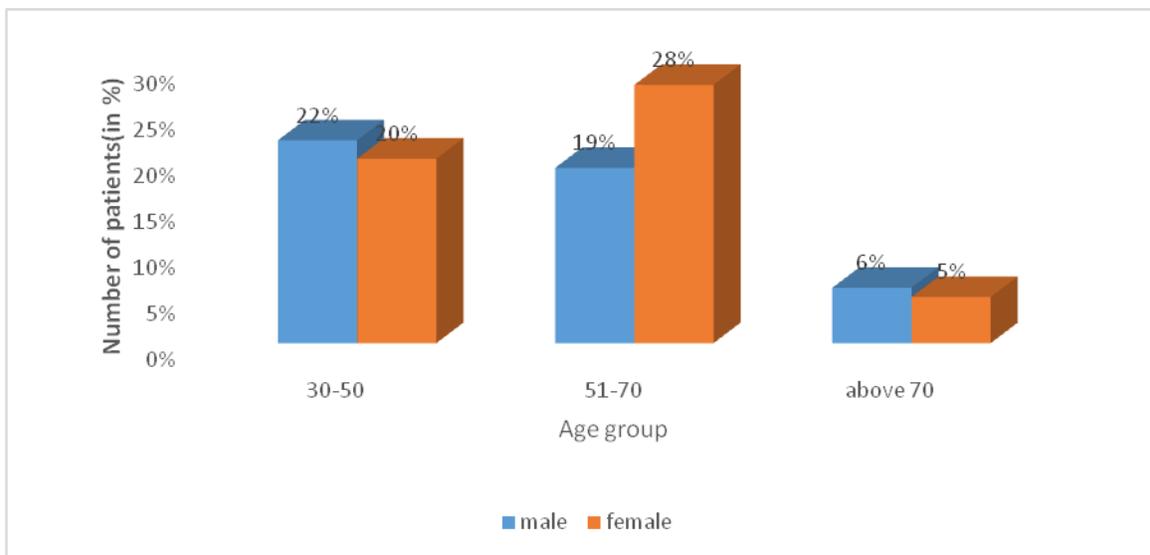
### Gender Wise Distribution of Hypertensive Patients

Gender	Number Of Patients	Percentage (%)
Male	47	47
Female	53	53



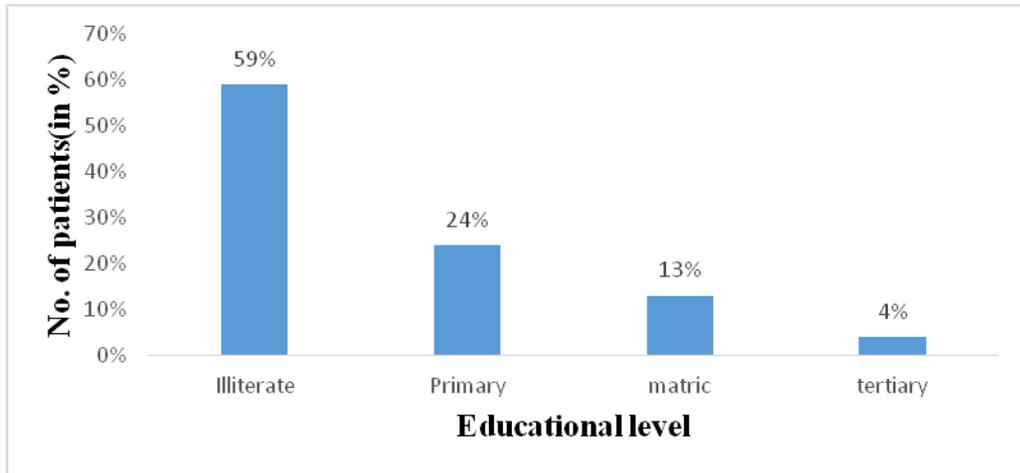
Age wise distribution of hypertensive patients

S.No	Age	Number of Male Patients	Number of Female Patients	Total Number of Patients
1	30-50	22 (22%)	20(20%)	42%
2	51-70	19(19%)	28(28%)	47%
3	Above 70	6(6%)	5(5%)	11%



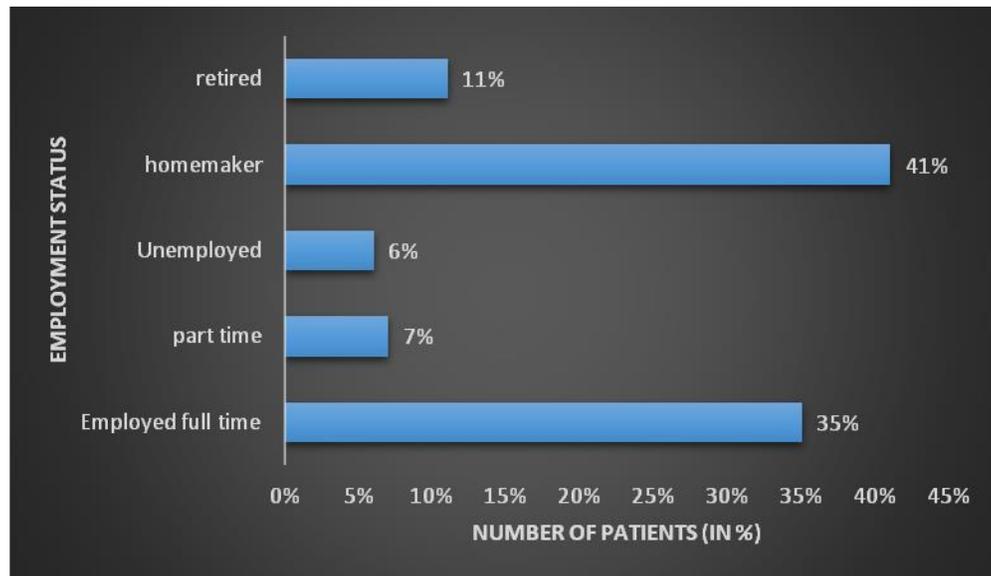
Educational status distribution of hypertensive patients

S.No	Category	No of patients (%)
1	Illiterate	59
2	Primary education	24
3	Higher secondary	13
4	Tertiary education	4



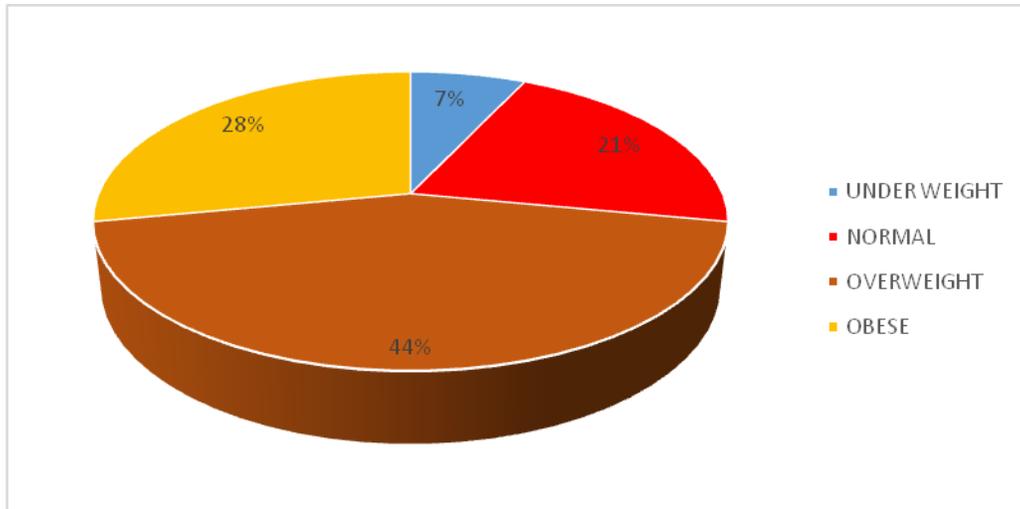
**Employment status**

S.No	Employment status	No of patients (%)
1	Full time	35
2	Part time	7
3	Unemployed	6
4	Homemaker	41
5	Retired	11



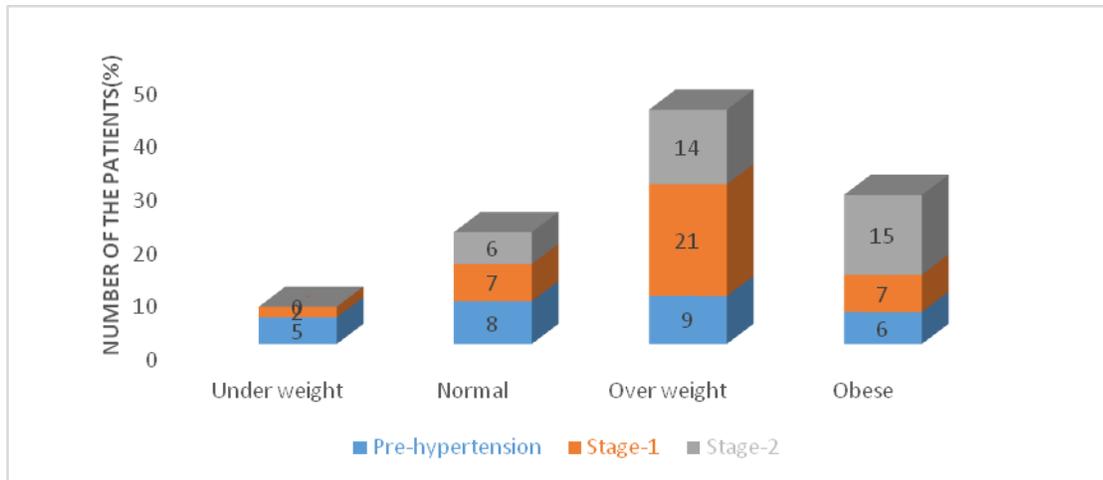
**Body mass index wise distribution of hypertensive patients**

S.No	Body mass index	BMI Score	No of patients (%)
1	Under weight	Less than 18.5	7
2	Normal	18.5-25	21
3	Overweight	25-30	44
4	Obese	Above 30	28



**Body mass index of respondents versus Blood pressure**

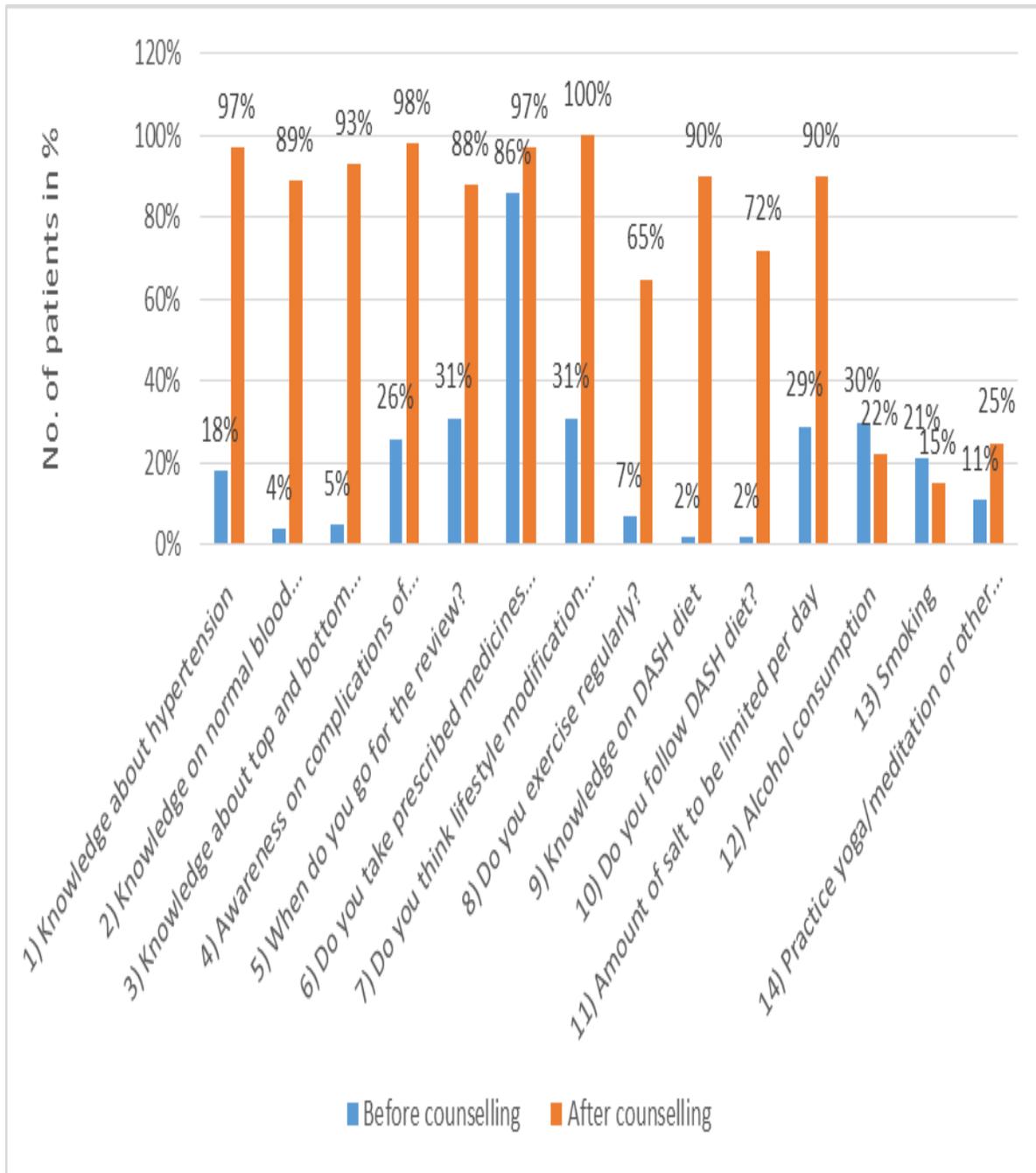
BLOOD PRESSURE mm/Hg	BMI Kg/m <sup>2</sup>				TOTAL (%)
	<19	19-24.9	25-29.9	>30	
120/80- 139/ 89	5	8	9	6	28
140/90-159/100	2	7	21	7	37
Above 160/100	0	6	14	15	35
<b>TOTAL(%)</b>	<b>7</b>	<b>21</b>	<b>44</b>	<b>28</b>	<b>100</b>



**Comparative parameters of study population by their knowledge, compliance, and lifestyle modifications before and after counselling**

<b>Knowledge and awareness on disease</b>	<b>Before counselling</b>	<b>After counselling</b>
1) Knowledge about hypertension	18%	97%
2) Knowledge on normal blood pressure level	4%	89%
3) Knowledge about top and bottom number of blood pressure level.	5%	93%
4) Awareness on complications of hypertension	26%	98%
5) When do you go for the review?	31%	88%
6) Do you take prescribed medicines regularly?	86%	97%
<b>Awareness and practice of lifestyle modifications</b>		
7) Do you think lifestyle modification help in BP management?	31%	100%
8) Do you exercise regularly?	7%	65%
9) Knowledge on DASH Diet	2%	90%
10) Do you follow DASH?	2%	72%
11) Amount of salt to be limited per day?	29%	90%
12) Alcohol consumption	30%	22%
13) Smoking	21%	15%
14) Practice yoga and meditation or other stress relieving techniques	11%	25%

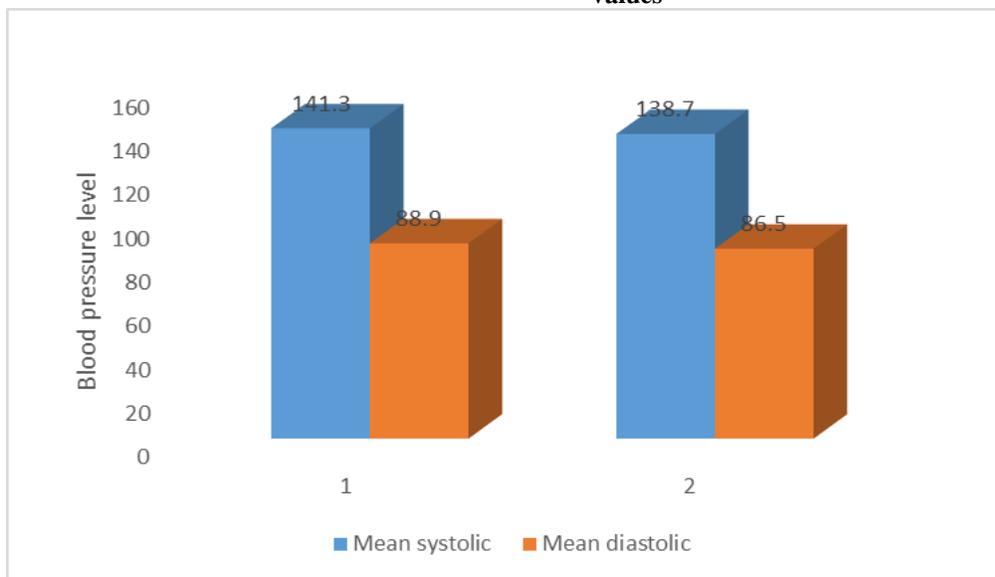
**Comparative parameters of study population by their knowledge, compliance, and lifestyle modifications before and after counselling**



**Project impact on hypertensive patients before and after counselling by assessing the mean blood pressure values**

Blood pressure(mmHg)	Before study	After study
Mean systolic	141.3	138.7
Mean diastolic	88.9	86.5

**Project impact on hypertensive patients before and after counselling by assessing the mean blood pressure values**



**CONCLUSION:**

A healthy lifestyle remains the cornerstone of the management of hypertension at all levels of the disease. A healthy lifestyle decreases blood pressure, enhances antihypertensive drug efficacy and decreases total cardiovascular risk. A prospective study was done to analyze the Perception and practice of hypertensive patients and impact of patient counselling on lifestyle modifications in management of hypertension among 100 hypertensive patients in the rural area of kondapanaickenpatty, Salem. Medical professionals can contribute to positive outcomes by educating and counselling patients and motivate them to follow their pharmacotherapeutic regimens as well as lifestyle modifications.

At the beginning of the study the mean systolic blood pressure and mean diastolic blood pressure of the study population was found to be 141.3 mmHg and

88.9 mmHg respectively. At the end of the study the mean blood pressure level was controlled. Mean systolic blood pressure was reduced by 2.6 mmHg (138.7 mmHg) and Mean diastolic blood pressure was reduced by 2.4 mmHg (86.5 mmHg). This results indicates effective counselling about the disease and proper education on the role of lifestyle modification in management of the hypertension, will help in the effective control of blood pressure within the normal ranges, thus the quality of life among the hypertensive patients in these rural areas could be improved.

These study findings has demonstrated inadequate knowledge among patients with hypertension. And also there is a poor level of awareness about lifestyle behaviour, which is needed in the control of hypertension among a representative sample of patients. The attitudes and behaviours of patients towards the adoption of these non-pharmacological

interventions were rather poor. The present study confirms that counselling is effective in improving patient's knowledge towards the disease management. There is a significant increase in the knowledge of the study population after pharmacist mediated counselling mainly in terms of disease, medication adherence and lifestyle modification for the better control of the disease.

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