



Prevalence of Hypertension, Awareness & Health seeking Behaviour Among Adults Residing in Field Practice Area of Urban Health Training Centre, Government Medical College Aurangabad

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ABSTRACT

Introduction: Theme for World Health Day 2013 is on controlling high blood pressure, a condition which affects more than one in three adults leading to more than nine million deaths worldwide per year.

Objectives: The study was conducted to find out the prevalence of hypertension; to study the various socio-demographic & lifestyle factors among participants and to study the Awareness & Health seeking behaviour in hypertensive.

Methods: A community based cross sectional study conducted in the field practice area of Urban Health Training Centre of Govt. Medical college Aurangabad. Study Subjects examined with the help of pretested Performa. Blood pressure, weight, height measured and recorded according to standard protocol. Data analysis was done by Percentages & Chi Square test using Epi-Info Statistical software. 305 study subjects examined.

Results: The overall prevalence of Hypertension was 26.2%. Prevalence was more in females 33.3% than in males 16.8% & was statistically significant. Out of the 80 hypertensive 58 were aware of their hypertension. Among the 58 aware hypertensive only 50 were taking treatment & out of the 50 hypertensive on treatment only 39 take treatment regularly.

Conclusion: These observations re-emphasize the need for tailor-made hypertension awareness programs. It also brings to light the need for follow-up, counselling and monitoring of hypertensive to reduce non-compliance to anti-hypertensive medication

Key words:- Prevalence, Regularity, Awareness, Hypertension, Treatment.

INTRODUCTION

"The Doctor of the Future will give No Medication but will interest his Patients in the Care of Human Frame, in Diet and in the Cause and Prevention of the Disease !!! --Thomas Edison ."¹ Every year, the World Health Organization selects a priority area of global public health concern as the theme for World Health Day. The theme for World Health Day 2013 is controlling high blood pressure, a condition which affects more than one in three adults

and leads to more than nine million deaths worldwide every year. ² In India there is 24-30% of prevalence of hypertension in urban areas and 12-14% in rural areas. This year we have woken up to the challenges of tackling the rising threat of 'Hypertension'³ A study showed that cardiovascular diseases in India caused 2.3 million deaths in the year 1990, of which hypertension was directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India⁴ The

number of adults with hypertension in 2025 is predicted to increase by about 60% to a total of 1.56 billion. According to the Global Burden of Diseases study, by the year 2025, cardiovascular diseases would be the major cause of deaths all over the world including the developing countries.⁵ Accurate estimates of hypertension prevalence are therefore necessary to plan effective control measures. There is a felt need for the community based studies in urban and rural areas of our country with a view to determine the geographic differences in the prevalence of hypertension and the awareness of being hypertensive, their treatment seeking behaviour as well as their compliance to the treatment in terms of regularity. The present study was undertaken to estimate the Prevalence of hypertension. The Awareness status & Health seeking behaviour among hypertensive's.

MATERIALS AND METHOD

The cross sectional study was carried out in the field practice area of Urban Health Training Centre. It is a designated field practice area of Government Medical College Aurangabad. All adults aged ≥ 18 years in the randomly selected households were examined over a period of one year from 1 January 2012 to 31 December 2012. If an adult of a household was either non-cooperative or could not be contacted even after two visits, he/she was excluded from the study. Persons < 18 years of age, Pregnant women & Severely ill persons were also excluded from study. JNC VII criteria⁶ is used for Hypertension classification as it is the currently used criteria by most clinicians to diagnose, classify & treat hypertension routinely. A person is considered hypertensive if :- The Systolic BP ≥ 140 and/or Diastolic BP ≥ 90 mmHg. Persons already on antihypertensive treatment were also considered as Hypertensive after examination & confirming the evidences produced. The sample size to find out prevalence of hypertension was calculated by using the formula, as follows : considering the prevalence of hypertension as 21% from the National data (Study conducted by The Indian Council of Medical Research. Non Communicable disease Risk factor Survey. Integrated Disease surveillance Project -phase I & II).⁷ Estimated prevalence $P = 21$, Confidence interval = 95 % , ($z = 1.96$) Absolute precision; $d = 5\%$; $n = z^2 [P(1-P)] \div d^2$; $n = 1.96 \times 1.96 [0.21(1-0.21)] \div 0.05 \times 0.05 = 254$. ; Sample size (n) = 254 with an expected non response rate of 20%, the required sample size was estimated as 305. The required sample size examined from the population under surveillance by systematic random sampling method.

Urban health training centre caters around 30000 population residing in the field practice area. As

per the data of the local area available with us an average family consists of 5 individuals, of which 2 are above 18 years of age. So the average number of houses in the study area are $30000 \div 5 = 6000$. Hence there are about $6000 \times 2 = 12000$ individuals above 18 years of age residing in the study area. In order to get a sample size of 305 ($12000 \div 300 = 40$) every 40th house was visited until the desired sample size achieved. Those who were absent at the time of house visit were informed to be present in the next visit. In case the selected house hold was locked on two visits, the next household in the neighbourhood was included in the study. BP was measured with a standard mercury sphygmomanometer which was standardised frequently against a same instrument throughout the period of Data collection. The weight was taken on a portable weighing machine with a calibrated scale of 0.5 kg marked from 0 to 130kgs and the machine was frequently validated using a standard weight. Height was measured with a calibrated measuring tape marked in centimetres. The measurement was taken in erect position, barefoot with feet together, heels against the wall and looking straight ahead. For maintaining the uniformity during data collection, house-to-house visits were made in the morning time. Aim & objective of the study and the benefits to the people being examined were explained to the adults and their oral informed consent was obtained. The synopsis submitted and Institutional Ethical Committee's approval sought before initiation of the study. No conflict of interest rested in the study conduction. A pilot study was initially conducted to assess the feasibility in terms of time and resources required. All the subjects were personally contacted in their houses, examined and interviewed using the pretested Perfor-

ma. On visiting the family, baseline data of the family members was taken and persons ≥ 18 were screened by taking two BP readings. A second visit was made to cover the missed subjects so that there was maximum participation of the subjects in all selected households. Before taking blood pressure measurement, it was ensured that the subject had not consumed food, tea, coffee, alcohol, had smoked or made any physical exertion for at least half an hour. The subject was also asked to empty the bladder, to make him/her relax &. Subject was made to seat for 15 minutes comfortably. Arm muscles relaxed and the forearm was comfortably supported with the upper arm at the level of the heart. The subject was also asked to avoid wearing anything with tight sleeves. Sphygmomanometer was kept at the eye level to avoid the effect of parallax. A standard adult size cuff of 20" x 6" inches applied evenly on the exposed right arm so that it will cover two third of the length of arm and two

third of its circumference. Systolic blood pressure was recorded by palpatory method at the start to rule out auscultatory gap. Blood pressure was recorded as per standard guidelines.⁶ The readings are made close to 2mm mark on the scale. Two such readings were recorded at an interval of 10 minutes and the average of the two readings was taken as the blood pressure of the person examined. Additional Dietary Salt Intake was accessed by enquiring whether they had the habit of consuming salted food, pickle, papad or adding extra table salt during meal routinely. Physical Activities were classified into sedentary, moderate and heavy work according to recommendations of the National Institute of Nutrition, ICMR Hyderabad⁸.

A person who was previously diagnosed and confirmed as hypertensive by a clinician and he/she also knows the same irrespective of the treatment status considered as an aware hypertensive. A hypertensive taking antihypertensive treatment from a registered medical practitioner considered as treatment taking hypertensive with documentary evidence. A hypertensive taking treatment continuously without break unless told by the physician to stop considered as regular treatment taking hypertensive. B.G Prasad socioeconomic Classification adopted and modified according to all India consumer price index (AICPI) for the month of March 2013.⁹ After collecting the information and doing the clinical examination of the individuals health education regarding risk factors, investigations, treatment, complications and preventive measures of hypertension was given to the family. The importance of regular treatment emphasized to the subjects on anti-hypertensive drugs and newly detected cases. All the subjects detected as hypertensive were referred to the Urban health Training Centre for further investigations, management and follow-up. Investigator gave treatment for minor ailments by prescribing and providing drugs. Data analysis was done by Percentages & Chi Square test using Epi-Info Statistical software.

RESULTS

After completing the house to house survey. 305 study subjects were examined out of which 80 i.e (26.2%) subjects were having hypertension. The overall prevalence of Hypertension was 26.2%. Prevalence of hypertension was more in females 33.3% than in males 16.8% which was found to be statistically significant (Table1). (Table 2) shows the socio-demographic distribution of the study subjects. Maximum number of hypertensive were in the age group of 18-35(34.8%) but was not statistically significant. Hypertensive were more in Muslim (32.5%) followed by Hindu (42.5%) & then

others (25%) which was not significant. There were more number of Hypertensive as married (71.2%), Living in joint family (71.2%) & more than 50% were belonging to (Class IV & V) socioeconomic class as per B.G Prasad classification.⁹ but the findings were not statistically significant. (Table 3) showing maximum number of hypertensive (61%) were having BMI 25 & more which was not statistically significant.

The habit tobacco chewing was found between (27.5%) of Hypertensive while only (11.2%) hypertensive were smokers the difference was statistically significant. (26.25%) hypertensive were having a habit of drinking alcohol found to be non significant. (18.8%) hypertensive were having diabetes which was statistically significant. (42.5%) were having a family history of hypertension while (43.8%) were having a having sedentary physical activity.(51.2%) hypertensive were having < 8 hour & Restless sleep. All these finding were non significant.(77.5%) hypertensive were taking mixed diet & was statistically significant.

Table 1: Prevalence of Hypertension

Sex	Hypertensive (%)	Non Hypertensive (%)	Total
Male	22 (27.5)	109 (48.44)	131
Female	58 (72.5)	116 (51.56)	174
Total	80 (26.2)	225 (73.8)	305

$\chi^2= 10.56$; $df=1$; p -value =0.001

Table 2: Socio-demographic profile of Study Subjects

Study variables	Hypertensive (n=80) (%)	Non-Hypertensive (n=225) (%)	p-value
Age (in years)			
18-35	10 (34.8)	41 (27.11)	0.373
36-60	32 (18.7)	69 (35.11)	
61-75	22 (17.4)	72 (43.11)	
>75	16 (8.2)	43 (19.11)	
Religion			
Hindu	26 (32.5)	95 (42.23)	0.174
Muslim	34 (42.5)	71 (31.55)	
Others	20 (25.0)	59 (26.22)	
Marital Status			
Married	57 (71.2)	158 (70.22)	0.863
Others	23 (28.8)	67 (29.88)	
Type of Family			
Nuclear	23 (28.8)	52 (23.01)	0.314
Joint	57 (71.2)	173 (76.99)	
Socio Economic Status			
Class I	13 (16.26)	23 (10.22)	0.247
Class II	09 (11.26)	37 (16.45)	
Class III	14 (17.06)	47 (20.88)	
Class IV	25 (31.26)	52 (23.12)	
Class V	19 (23.76)	66 (29.33)	

Table 3: Distribution of study subjects according to Lifestyle factors

Study variable	Hypertensive (n=80) (%)	Non-Hypertensive (n=225) (%)	p-value
Body Mass Index			
< 18.50	7 (8.75)	36 (16.00)	0.154
18.50-24.99	24 (30.00)	63 (28.00)	
25-29.99	28 (35.00)	55 (24.45)	
≥ 30	21 (26.25)	71 (31.55)	
Tobacco chewing			
Yes	22 (27.50)	92 (40.88)	0.034
No	58 (72.50)	133 (59.12)	
Smoking			
Yes	09 (11.2)	51 (22.77)	0.027
No	71 (88.8)	174 (77.33)	
Alcohol			
Yes	21 (26.25)	67 (29.77)	0.550
No	59 (73.75)	158 (70.23)	
Are you Diabetic			
Yes	15 (18.8)	101 (44.88)	0.001
No	65 (81.2)	124 (55.22)	
Family History			
Yes	34 (42.5)	83 (36.88)	0.375
No	46 (57.5)	142 (63.12)	
Physical activity			
Sedentary	35 (43.8)	92 (40.88)	0.656
Non-sedentary	45 (56.2)	133 (59.12)	
Duration of Sleep			
≥ 8	39 (48.8)	128 (56.88)	0.209
< 8	41 (51.2)	97 (43.12)	
Nature of Sleep			
Calm	39 (48.8)	128 (56.88)	0.209
Restless	41 (51.2)	97 (43.12)	
Type of Diet			
Vegetarian	18 (22.5)	82 (36.45)	0.022
Mixed	62 (77.5)	143 (63.55)	
Additional Dietary Salt Intake			
Yes	35 (43.8)	115 (51.12)	0.258
No	45 (56.2)	110 (48.88)	

Table : 4 Distribution of study subjects based upon gender & their status according to Awareness Treatment & Regularity.

Variable	Male(%)	Female(%)	Total (%)	P value
Awareness status of Hypertension				
Yes	17(77.27)	41(70.68)	58(72.5)	0.55
No	05(22.73)	17(29.32)	22(27.5)	
Total	22(100)	58(100)	80(100)	
Taking treatment				
Yes	39(92.85)	11(68.75)	50(86.20)	0.06
No	03(7.15)	05(31.25)	08(13.80)	
Total	42(100)	16(100)	58(100)	
Regularity				
Yes	12(66.66)	27(84.38)	39(78)	0.27
No	06(33.34)	05(15.62)	11(22)	
Total	18(100)	02(100)	50(100)	

Habit of taking additional dietary salt intake was observed in (43.8%) hypertensive & was found to be non significant. Out of the 80 hypertensive's 58

were aware of their hypertension. Among the 58 aware hypertensive's only 50 were taking treatment & out of the 50 hypertensive on treatment only 39 take treatment regularly (Fig no 1) while rest of them have either stopped their treatment by their own or were irregular i.e. were frequently taking treatment in an on & off behavioural pattern, carelessly only when they don't feel better. The gender wise distribution of study subjects & their status according to Awareness Treatment & Regularity reveals that though there was a difference but the difference was not statistically significant. (Table 4)

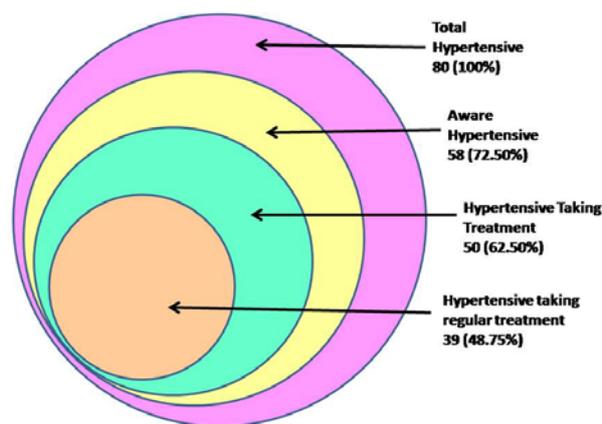


Figure 1: Distribution of Hypertensive's according to Awareness, Treatment & Regularity.

DISCUSSION

Hypertension is a major cause of morbidity in developing countries which are in a state of epidemiological transition for non-communicable diseases. Various studies project a major increase in cardiovascular diseases in India that can be attributed to an increase in life expectancy and changes in the age structure of the growing population. Since, a high prevalence of hypertension has been reported in both rural and urban areas of India There is a felt need for the community based studies in urban and rural areas of our country with a view to determine the geographic differences in the prevalence of hypertension and the awareness of being hypertensive, their treatment seeking behaviour as well as their compliance to the treatment in terms of regularity. After collecting the background demographic details, physical measurements and clinical examination of the sample study population from department's field practice area. The prevalence and status of being hypertensive, their treatment seeking behaviour & compliance in terms of regularity are presented and discussed here. Estimates of the prevalence of hypertension depend on the cut-off point by which it is defined. For this study we used the Joint National Commit-

tee (JNC VII) definition and found the overall prevalence of systemic hypertension to be 26.2%. which is higher than the National data (21%)⁷ and other studies done in urban area in Rewa (21.3%)¹⁰ and rural area in Nagpur (15.4%)¹¹ which also used the same JNC VII criteria. This could be because of variation in changes of social, economic and cultural backgrounds and difference in the year (time duration) when the study was conducted.

In our study the prevalence of systemic hypertension was higher among females (33.3%) than males (16.8%) which is similar to a study done at Nagpur¹¹ but opposite to the common findings seen in other studies.^{7,10} This could be attributed to the fact that there were more number of females than males in the population surveyed. In a review by Gupta et al, the prevalence rate in urban India was reported to vary from 3.0% to 44.5% using recent WHO criteria he also states further that epidemiological studies have shown hypertension is present in 25% of urban and 10% of rural subjects in India.⁴ (61%) of subjects were having BMI ≥ 25 thereby having a high risk for hypertension. More than 50% of subjects were from socioeconomic Class IV & V as per B.G Prasad classification.⁹ There were many studies available showing socioeconomic status as a significant risk factor for hypertension.^{12,13,14} Maximum number of subjects were taking Mixed diet (77.5%). Habit of taking extra table salt was seen in (43.8%) subjects. Studies in western and Indian populations have shown that dietary salt intake is a significant risk factor for hypertension and cardiovascular disease. Similarly, other studies observed and reported that extra table salt intake is associated with hypertension^{14,15}. Out of the Surveyed population (27.5%) subjects were having a habit of tobacco chewing, (11.2%) having a habit of smoking and (26.25%) drinking alcohol. The various studies across the Globe and India indicated that alcohol use^{15,16} as risk factor of hypertension. (18.8%) subjects were having diabetes while family history of hypertension was seen in (47.5%) subjects. (43.8%) subjects were having sedentary physical activity. (51.2%) subjects were having less than 8 hours & Restless sleep. In our study we found that out of 80 hypertensive, 58 were aware of their hypertension. Among the 58 aware hypertensive's only 50 were taking treatment & out of the 50 hypertensive on treatment only 39 take treatment regularly. We have not only seen the control status but also the regularity of the treatment. Similar observations were also made by other studies but the awareness, treatment and regularity status in our study subjects was much higher than other studies.^{7,11,17,18} This could be attributed to the fact that our study conducted in the field practice area of urban health training centre where

there are high chances of getting good health services. As a part of Information Education Communication activities regular poster presentations and street plays are carried out at Urban health centre spreading awareness about health. There is special hypertension and diabetes clinic on every Tuesday and Thursday at urban health training centre.

CONCLUSION

Prevalence of hypertension found out to be 26.2%. Prevalence was more in females 33.3% than in males 16.8% which was statistically significant. Socio demographic & lifestyle factors observations among hypertensive reveals a need for their lifestyle modification. Out of the 80 hypertensive's 58 were aware of their hypertension. Among the 58 aware hypertensive's only 50 were taking treatment & out of the 50 hypertensive on treatment only 39 take treatment regularly. It also brings to light the need for follow-up, counselling and monitoring of hypertensive's to reduce non-compliance to anti-hypertensive medication.

LIMITATIONS & RECOMMENDATION

We have put sincere efforts in exploring the web of hypertension but there were some limitations, like number of females were more than number of males, because the timing of the data collection was in the morning hours, hence many male subjects were not available at home as they had left for their working place. In this study only anthropometric and blood pressure measurements were taken. Patient's Bio-chemical profile was not done because of time and resource constraints. Prevalence estimates have based only on a single occasion measurement of blood pressure. Results of the present study may not be generalized to the population of India due to differences in socio-economic variables, dietary habits and cultural practices existing in the country. Prevalence of hypertension in our study was found to be 26.2% which is higher than the national average. Hence additional research in the area of primary prevention of high BP should be encouraged. This should focus on the development of cost-effective programs for primary prevention of hypertension, which can be implemented in the general population (population strategy) and more intensive programs for those at special risk of developing hypertension (targeted strategy). We have put a step forward by contributing a small bowl of water to a big pond of hypertension prevalence and its associated risk factors. But what is more important is large ocean's are always made drop by drop. Hence more number of studies are still needed to explore the vivid and dynamic nature of the biggest iceberg (Hyperten-

sion) in the sea of life, so our ship of health can sail safely.

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