

**Original article:**

## **Cross Sectional Study on Prevalence of Hypertension in Rural Field**

### **Practice area of A Medical College – Hyderabad**

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#### **Abstract:**

**Background:** According to World Health Organization (WHO) 2014 estimates on Non Communicable diseases (NCDs) in India account for 60% proportional mortality. Majority of the NCDs share common risk factors such as tobacco use, high alcohol consumption, overweight & obesity, inadequate physical activity and inappropriate dietary practices. Hypertension is now one of the most common non-communicable diseases globally. It is one of the most leading causes of death due to cardiovascular diseases and stroke. More alarming, conservative estimates indicate that the global burden of hypertension will increase to more than 1.56 billion by 2025. Its prevalence is increasing in countries undergoing economic transition.

**Objective:** To assess the prevalence of hypertension in rural field practice area of a Medical College.

**Methods:** Data was collected using a pre-tested, structured questionnaire from a total of 230 people.

**Results:** Out of 230 samples, 155 are females and 75 are males. Prevalence of Hypertension was found to be 50%. Among males it is 60% in females it is 45.16%.

**Conclusion:** There is still need for increase in IEC and BCC activities in terms of awareness regarding risk factors of hypertension, complications.

**Key words:** Prevalence, Information Education Communication, Behaviour Change Communication

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#### **Introduction**

According to World Health Organization (WHO) 2014 estimates on Non Communicable diseases (NCDs) in India, NCDs are estimated to account for 60% proportional mortality (% of total deaths, all ages, both sexes) which include CVDs (26%), cancers (7%), chronic respiratory diseases (13%), Diabetes (2%), injuries (12%) and other NCDs (12%). Total deaths due to NCDs were 98,16,000.

[1] Majority of the NCDs share common risk factors such as tobacco use, high alcohol consumption, overweight & obesity, inadequate physical activity and inappropriate dietary practices. Combination of the risk factors increases the morbidity and mortality of NCDs. [2] Hypertension (HTN) or high blood pressure (systolic blood pressure  $\geq 140$  mmHg and diastolic

blood pressure  $\geq 90$  mmHg) is an overwhelming global challenge which ranks third as a cause of disability adjusted life-year [3]. Hypertension causes 7.1 million premature deaths each year worldwide and accounts for 13% of all deaths globally [4]. More alarming, conservative estimates indicate that the global burden of hypertension will increase to more than 1.56 billion by 2025. As the most important modifiable risk factor for cardiovascular disease and all-cause mortality, high blood pressure was responsible for approximately 7.6 million deaths globally, or 13.5% of all deaths, in 2001.(5) The dietary pattern and lifestyles in India have dramatically changed. Specifically, Indians consume more fat, meat products and salt, less complex carbohydrates, fruits and vegetables, and engage in lower amounts of physical

activity.(6) Anchala *et al.* report findings from their meta-analysis of population-based studies on the prevalence, awareness, treatment and control of hypertension in India. They reported an overall hypertension prevalence of 29.8%, indicating that as many as 378.5 million Indian adults may suffer from hypertension. Overall, the prevalence of hypertension was significantly higher in urban than in rural region. These findings indicate that better strategies for the detection and control of hypertension are urgently needed in India. Anchala *et al.* also reported that age, alcohol consumption, smoking and chewing tobacco, BMI, central obesity, low intakes of dietary fruits and vegetables, high intakes of dietary fat and salt and sedentary activity were significant risk factors for hypertension in India. These risk factors are consistent with findings from etiologic and interventional studies reported extensively worldwide. Lifestyle intervention strategies, such as sodium reduction and weight loss, could aid in the primary prevention of hypertension in this population.(7) The theme for World Health Day (WHD) 2013 is “high blood pressure”.(8) The goal of WHD 2013 is to reduce heart attacks and strokes. Keeping in line with the WHO-Government of India Country Cooperation Strategy, the WHD 2013 events in India are aimed at raising the awareness amongst national policymakers, program managers and other stakeholders on the need to strengthen the Indian health system to make it competent enough to respond to hypertension and related co morbidities(8). Hypertension is a controllable disease and it has been reported that targeted reductions in people with hypertension are expected to produce large reductions in the burden of cardiovascular disease [9]. According to the seventh report of the Joint National Committee (JNC-7) on prevention,

detection, evaluation and treatment of high blood pressure, adoption of healthy lifestyles by all individuals is critical for the prevention of high blood pressure. Accurate estimates of hypertension are therefore necessary to plan effective control measures (8).

#### **Aims and objectives**

1. To study the socio-demographic profile of adults in the age group above 20yrs of age.
2. To study the prevalence of hypertension in rural field practice area of a medical college.

#### **Material and methods**

**STUDY DESIGN**-Cross-sectional study

**INCLUSION CRITERIA:** All persons above 20years of age with known hypertension taking treatment or no measurement. Cut-Off point is taken as 140/90mm of Hg.

**EXCLUSION CRITERIA:** All persons below 20years of age and those who are not willing to participate are excluded.

**STUDY SAMPLE:** Calculated by taking prevalence as 30% according to the study by Anchala *et al* by formula  $4pq/L^2$ , and relative error taken as 10% so sample size is 230.

**STUDY SETTING:** Rural field practice area of Osmania medical College –Hyderabad.

**DATA COLLECTION:** Through house to house survey and Predesigned, Pretested Structured Questionnaire, after taking informed consent.

**STUDY DURATION:** Two Months.

**STUDY VARIABLES:** Socio-Demographic profile and Risk Factors of Hypertension.

This is a community based cross-sectional study done for a period of two months from July 2016 to August 2016. This study was planned in the Rural field practice area of Osmania Medical College-Hyderabad. House to house survey was done. Door to door survey was done and houses were selected by using simple random sampling by lottery

method .Informed consent was obtained from each of the subject .A thorough clinical exam was performed, and data was collected through predesigned pretested questionnaire and blood pressure was recorded using Omron

sphygmomanometer .Three readings were taken with a gap of 5 min and average reading was recorded. All people above 20 years of age in the house were examined and data collected.

**Results:**

**Table 1: Socio-Demographic profile:**

AGE (years)	NUMBER	PERCENTAGE (%)
20-30	30	13.04
30-40	45	19.56
40-50	70	30.44
50-60	50	21.74
>60	35	15.22
<b>GENDER</b>		
Male	75	32.6
Female	155	67.4
<b>OCCUPATION</b>		
Professional	2	0.86
Semi professional	10	4.34
Clerical	35	15.22
Manual skilled	64	27.83
Unskilled	119	51.75
<b>MARITAL STATUS</b>		
Married	184	80
Others	46	20
<b>RELIGION</b>		
Hindu	190	82.61
Muslim	30	13.04
Christian	10	4.35
<b>EDUCATION</b>		
Illiterate	96	41.74
Literate	134	58.26
<b>SES</b>		
Upper	5	2.17
Upper middle	15	6.52
Lower middle	110	47.82
Upper lower	75	32.62
Lower	25	10.87
Total	230	100

**Table 2: Distribution of study subjects based on family history of hypertension**

Family h/o HTN	Number	Percentage (%)
Yes	126	54.78
No	104	45.22
Total	230	100

**Table 3: Distribution of study subjects based on hypertensives and normotensives**

Status	Males	Percentage (%)	Females	percentage	Total (%)
Hypertensives	45	60	70	45.16	115(50)
Normotensives	30	40	85	54.84	115(50)
Total	75	100	155	100	230(100)

**Table 3: Distribution of study subjects based on severity of hypertension**

Hypertension	Number	Percentage (%)
Mild	40	17.4
Moderate	115	50
Severe	75	32.6
Total	230	100

The present study was conducted at chitkul which is a rural field practice area of Osmania Medical College –Hyderabad. A total of 230 people in the age group above 20 years were studied out of whom 32.6% were males and 67.4% were females. Maximum numbers of them were in the age group 40 to 50 years and lowest below 30 years. Majority of the people are Hindus 82.61%, followed by Muslims 13.04% and Christians 4.35%. 80% of them are married. 41.74% of them are illiterates and 58.26% were literates. Occupation wise 51.75% of them are unskilled and housewives. About socio-economic status 47.82% belong to Lower middle class and 32.62% in upper lower. Prevalence of hypertension in the present study is 50%, among males it is 60% and females it is 45.16%. 47.83% have hypertension since less than 5 years. Regarding family history of hypertension 54.78% said they have a family history of hypertension.

### Discussion

In the present study, majority of patients are in the age group of 40-50 years (30.44%). Among the total study population of 230, 155 (67.4%) are females and 75 (32.6%) are males. But in a study conducted in Italy 78% were males and 22% were females'. (10). The disparity between males and females in our study may be due to males going for work during day time and investigation was done.

Occupation wise 51.75% of the total population is unskilled followed by 27.83% are manually skilled. A study done by **Justin Zaman et al**(11) in rural Andhra 6.7% of males are manually skilled and 52.2% of females are unskilled.

The difference is because of the difference in study settings (Urban and Rural). Majority of males are auto drivers, welders, plumbers and car mechanics. And females are housewives. In our study 80% of the population is married and 20% are widowed/widowers, Unmarried, separated

respectively. This is almost similar to study conducted by **R.Gupta et al** (12) 85.6% of the study subjects were married. Since marriage is a universal issue, majority of people are getting married by 20yrs of age, among the study subjects 82.61% are Hindus, Muslims, 13.04%, 4.35% are Christians. Out of the total study subjects 41.74% are illiterates, 58.26% are literates .which is similar to a study done by **Sowmya Deb et al**(13) 45% of the population was illiterate. In this study 47.82 % of subjects belong to lower middle class followed by upper lower(32.62%) In this study the prevalence of hypertension is 50% in the total population, among males it is 60% and in females it is 45.16%. It is more when compared to studies done in **Tirupati**(14)(20.93%) ,**Kumbkarni et al**(15) (16%) ,**Kutty et al**(16)(17.8%) ,**Yajnik.C.**(10)(14%) **Gupta .R .et al** (12)(36.4% in males and 37.7% in females), **Lanasetal** (17)(39.7% in males and 21.8% in females), this may be because of the evolving trend of hypertension as an epidemic even in rural. In this study 32.6% of the total subjects have high hypertension , 50% have moderate and 17.4% have mild hypertension which is in coincidence with a study performed in Chile(18), In the total study subjects 54.78% have a family history of hypertension .This shows the non modifiable risk

factor like genetic predisposition is positive in more than half of the population.

Limitations of the study were that since there was a time and manpower constrain the study was conducted in a small sample at field practice area.

#### **Conclusions:**

Prevalence and Severity of Hypertension is more in males compared to females because men have more associated risk factors like smoking, alcohol and stress. Half of the population have family history of hypertension which shows a genetic predisposition to hypertension. Severity and prevalence of hypertension is increasing with age, can be considered as an epidemic with long incubation period. Prevalence is more in illiterates and in urban areas because of less knowledge in illiterates and changing pattern of lifestyle in urban living. Predisposing factors noted are obesity, stress and sedentary lifestyle, in urban areas. Increase in addictions like smoking and alcohol also lead to increase in hypertension

#### **Recommendations:**

There is need for increase in IEC and BCC activities regarding healthy lifestyle, diet etc. Hypertensives should be advised for regular health check-ups, diet and diagnostic tests, strengthening of health services for hassle free check-ups.

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