

“A Study to Assess the Prevalence and Determinants of Hypertension among Adults in Selected Rural Areas of Moradabad, Up, India”

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Abstract:

Background

Hypertension is one of the most important modifiable risk factors for cardiovascular disease (CVD). Hypertension in early stages does not show any symptoms; hence many are unaware of its presence. The prevalence of hypertension is increasing and it correlates with the chronic kidney disease in the US. Early detection is feasible using a simple and accurate screening test and aggressive blood pressure management. Yet this has not received adequate attention or allocation of public health resources for planning effective preventive strategies. In India, as a developing country with a population estimated at 1.1 billion, the prevalence of hypertension has been estimated to be 3% to 34.5% in males and 5.8% to 33.5% of females.

Materials and Methods:

The study was to assess the prevalence of hypertension and risk factors of hypertension in the selected rural area of Moradabad. A quantitative research approach was used to assess the prevalence of hypertension status among the adults and to find out the association with selected demographic variable. The research design for the present study was descriptive research design. The target population for the study was adults in selected rural area in Moradabad. Samples were adults of selected village, sample size was 500 and sampling technique used for this study was Non probability convenience sampling. The research instrument was developed in English after extensive review of literature and expert opinion. The structured questionnaire was prepared to assess the prevalence of hypertension and its risk factors. Data analysis was done by both descriptive and inferential statistics on the basis of objectives and hypothesis of study and to compute data, master data sheet was prepared. Prevalence of hypertension was assessed according to BP measurements of the samples and association with selected demographic was determined by chi square test.

Result

The level of hypertension among adults was 75.4% people have normal blood pressure, 22.4% have moderate hypertension and 2.2% have severe hypertension. The risk factors of hypertension identified from the study are smoking, alcoholism, increased salt intake, inadequate fruits and vegetable intake, lack of physical exercises and follow up.

Conclusion

There was a statistical significant association between the age of the person and prevalence status of hypertension at 0.05 levels and no statistical association could be established with other remaining demographic variable. There was also a statistical association between smoking status, alcoholism and physical activities of the adults. Hence the present study suggests that primordial prevention should be used to prevent hypertension.

Key Words: Assess, Prevalence, Determinants, Hypertension, Adults

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I. Introduction

Hypertension (HTN) or high blood pressure, sometimes called arterial hypertension, is a chronic medical condition in which the blood pressure in the arteries is elevated. Blood pressure is summarized by two measurements, systolic and diastolic, which depend on whether the heart muscle is contracting (systole) or relaxed between beats (diastole). This equals the maximum and minimum pressure, respectively. There are different definitions of the normal range of blood pressure. Normal blood pressure at rest is within the range of 100–140 mmHg systolic (top reading) and 60–90 mmHg diastolic (bottom reading). High blood pressure is said to be present if it is often at or above 140/90 mmHg.

Hypertension is classified as either primary (essential) hypertension or secondary hypertension; about 90–95% of cases are categorized as "primary hypertension" which means high blood pressure with no obvious

underlying medical cause. The remaining 5–10% of cases (secondary hypertension) is caused by other conditions that affect the kidneys, arteries, heart or endocrine system.

BACK GROUND OF THE STUDY

The burden of hypertension varies remarkably throughout the regions of the world and is a serious public health problem in both developed and developing countries. Both systolic and diastolic hypertensions are important predicting risk factors of cardiovascular disease, chronic kidney disease and stroke. World Health Organization (WHO) data indicate that by 2025 the global burden of hypertension will increase by 60% to be 1.56 billion individuals worldwide and higher in the developed nations. Lopez et al. have shown that 5.3 million deaths were attributable to cardiovascular disease in the western world as compared to 8 to 9 million in the developing world. According to a recent report, hypertension was the third major cause of disease burden, in both developed and developing regions worldwide, with 64 million disability adjusted life years (DALY).

Hypertension is one of the most important modifiable risk factors for cardiovascular disease (CVD). Hypertension in early stages does not show any symptoms; hence many are unaware of its presence. The prevalence of hypertension is increasing and it correlates with the chronic kidney disease in the US. Early detection is feasible using a simple and accurate screening test and aggressive blood pressure management. Yet this has not received adequate attention or allocation of public health resources for planning effective preventive strategies. In India, as a developing country with a population estimated at 1.1 billion, the prevalence of hypertension has been estimated to be 3% to 34.5% in males and 5.8% to 33.5% of females.

NEED FOR THE STUDY

The World Health Organization (WHO) reports NCDs to be by far the leading cause of death in the world, representing over 60% of all deaths. Out of the 36 million people who died from NCDs in 2005, half were under age 70 and half were women. Of the 57 million global deaths in 2008, 36 million were due to NCDs. That is approximately 63% of total deaths worldwide. Risk factors such as a person's background, lifestyle and environment are known to increase the likelihood of certain NCDs. Every year, at least 5 million people die because of tobacco use and about 2.8 million die from being overweight. High cholesterol accounts for roughly 2.6 million deaths and 7.5 million die because of high blood pressure.

II. Material and Methods

A quantitative research approach is used to find the prevalence of hypertension, determinants of hypertension, to find the association between selected variables and hypertension status and association between severity of hypertension and its determinants.

Study Design- Descriptive research design is selected.

Study Setting -The setting for this study will be selected rural area of Moradabad.

Study Sample- Sample is subset of population selected to participate in a research study.

Sampling - Sample Population in the study consists adults of selected rural areas of Moradabad, UP.

Sample Size - Total sample of the study will consist of 500 adults.

Sampling Technique - Non probability, convenient sampling will be used for the study.

Inclusion Criteria

1. Adults are including in the study.
2. People living in rural area.

Exclusion criteria

1. Below 18 years
2. Those who are not willing.

Procedure Methodology- Plan is to construct a tool having-demographic variables, tobacco use, alcoholic pattern, dietary pattern and questionnaire. The data will be organized, tabulated and analyzed by using descriptive and inferential statistics. The data will be planned to present in the form of tables and figures. Formal permission was taken from Pradhan. The structured questionnaire was administered to assess the prevalence of hypertension. The subject was assured for confidentiality of their responses. The non probability convenient sampling technique was applied in data collection.

Description Of The Data Collection Tool- The structured knowledge questionnaire comprised of 2 parts

Part I: Demographic Performa: A demographic Performa (8 items) was developed to collect data on sample characteristics: It include mainly:

1. Gender
2. Age of respondents
3. Marital status

4. Educational status
5. Occupation
6. Monthly income
7. Religion
8. Source of information

Part II: Structured questionnaire

A structured questionnaire was developed. All items have three options, and the scoring pattern adopted was zero, one and two. The score indicates the risk of hypertension among the adults. The structured questionnaire covers the following sections: behavioural pattern, life style of the sample and BP measurements.

Statistical analysis

Descriptive statistics: To describe demographic variable by percentage distribution.

Inferential statistics: Chi square Test to determine the association between severities of hypertension with selected demographic variables and to find association between severity of hypertension and determinants of hypertension.

III. Result

1. Section –A Description of demographic variables of respondents.
2. Section –B Prevalence of Hypertension among Adults
3. Section-C Association between selected variables and hypertension status.
4. Section- D Association between severity of hypertension and determinants of hypertension.

SECTION-A

Table- 1 Frequency and percentage distribution according to sex of adults. N=500

Demographic variables		Frequency (f)	Percentage (%)
Sex	Male	303	60.6%
	Female	197	39.4%

Table 1 shows that 60.6% of adults were male and 39.4% were female.

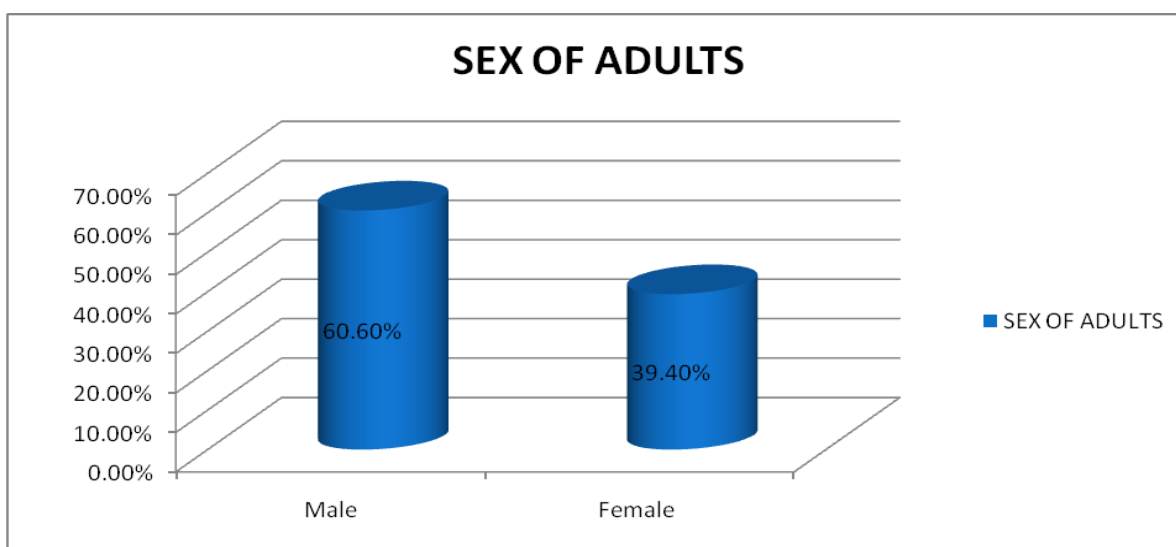


Figure -1 Bar diagram showing sex of the adults

Table-2 frequency and percentage distribution of adults according to the age groups N=500

Demographic variables		Frequency (f)	Percentage (%)
Age	18-30	152	30.4%
	31-40	153	30.6%
	41-50	128	25.6%
	51-60	52	10.4%
	61-70+	15	3%

Table 2 shows that 30.4% adults were from age group of 18-30, 30.6% adults were from age group of 31-40, 25.6% adults were from age group 41-50, 10.4% adults were from age group of 51-60, 3% adults were from age group of 61-70+.

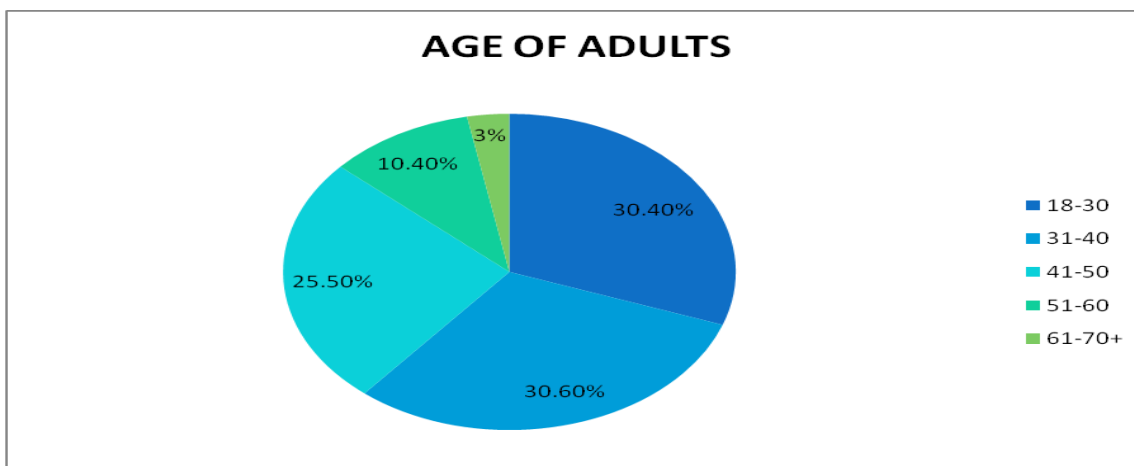


Figure -2 Pie diagram showing distribution of adults according to age

Table -3 Frequency and percentage distribution of adults according to marital status N=500

Demographic variables	Frequency(f)	Percentage (%)
Marital status	Single	114
	Married	347
	Divorced	22
	Widow	17
		22.8%
		69.4%
		4.4%
		3.4%

Table 3 shows that 22.8% adults are single, 69.4% adults are married, 4.4% adults are divorced and 3.4% adults are widow.

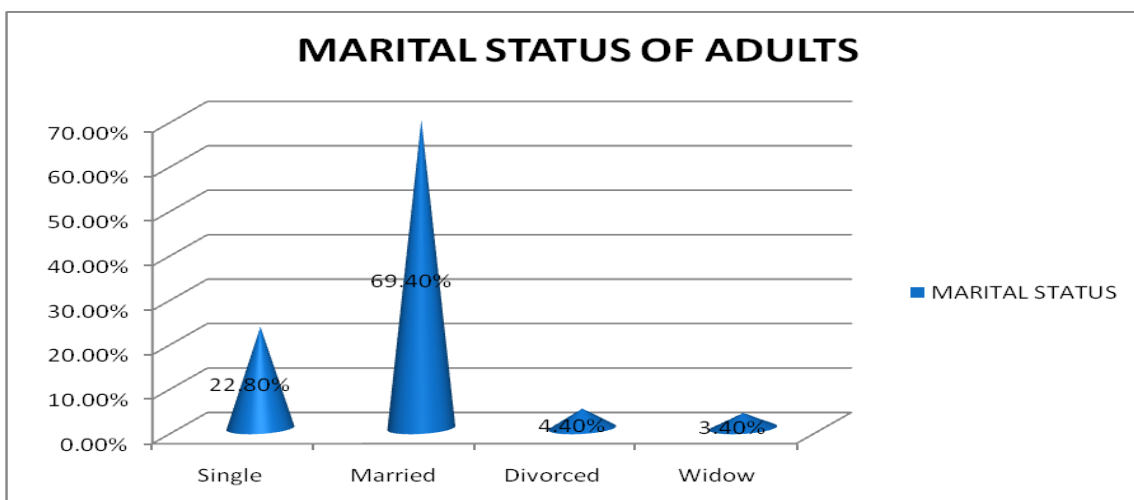


Figure -3 Bar diagram showing percentage distribution of sample according to marital status.

Table-4 frequency and percentage distribution of adults according to education status N=500

Demographic variables	Frequency (f)	Percentage (%)
Education	Never	90
	Primary school	136
	High school	90
	Intermediate	88
	Graduate	83
	PG	13
		18%
		27.2%
		18%
		17.6%
		16.6%
		2.6%

Table-4 shows that 18% adults are illiterate, 27.2% adults having primary school education, 18% adults have high school education, and 17.6% adults have intermediate education, 16.6% adults are graduate and 2.6% adults are PG.

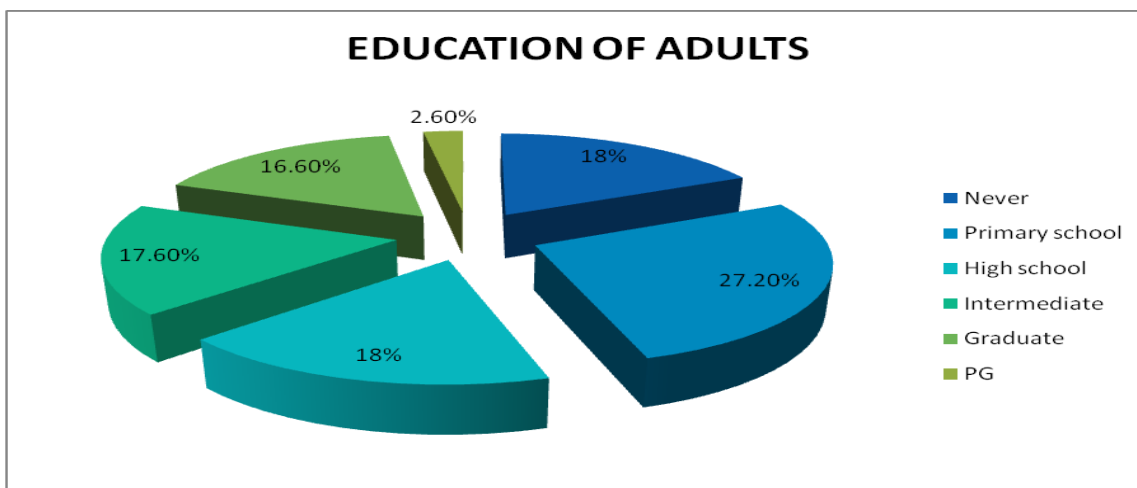


Figure -4; Bar diagram showing percentage distribution of adults according to educational status

Table-5 Frequency and percentage distribution of adults according to occupation N=500

Demographic variable		Frequency (f)	Percentage (%)
Occupation	Informal	82	16.4%
	Formal	112	22.4%
	Housewife	149	29.8%
	Not employed	98	19.6%
	Students	49	9.8%
	Others	10	2%

Table-5 shows that 16.4% adults are informal workers, 22.4% adults are formal workers, 29.8% adults are housewife, 19.6% adults are unemployed, 9.8% adults are students and 2% are others.

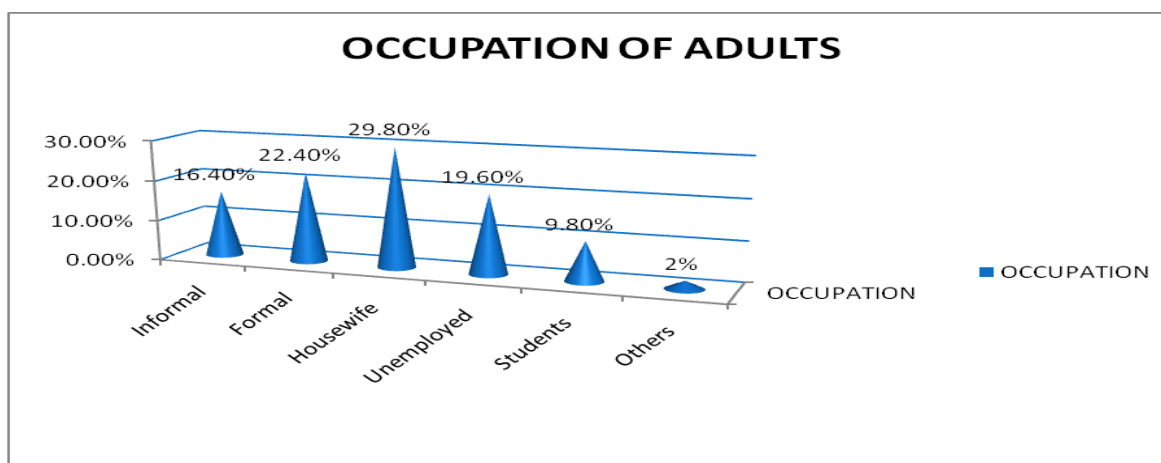


Figure -5 Bar diagram showing percentage distribution of adults according to occupation

Table-6 Frequency and percentage distribution of adults according to monthly income N=500

Demographic variable		Frequency (f)	Percentage (%)
Monthly income	5000-10,000	310	62%
	10001-15,000	151	30.2%
	Above 15,000	39	7.8%

Table-6 shows that 62% adults having monthly income 5000-10,000. 30.2% adults having 10001-15,000 monthly income and 7.8% adults having above 15,000 monthly incomes.

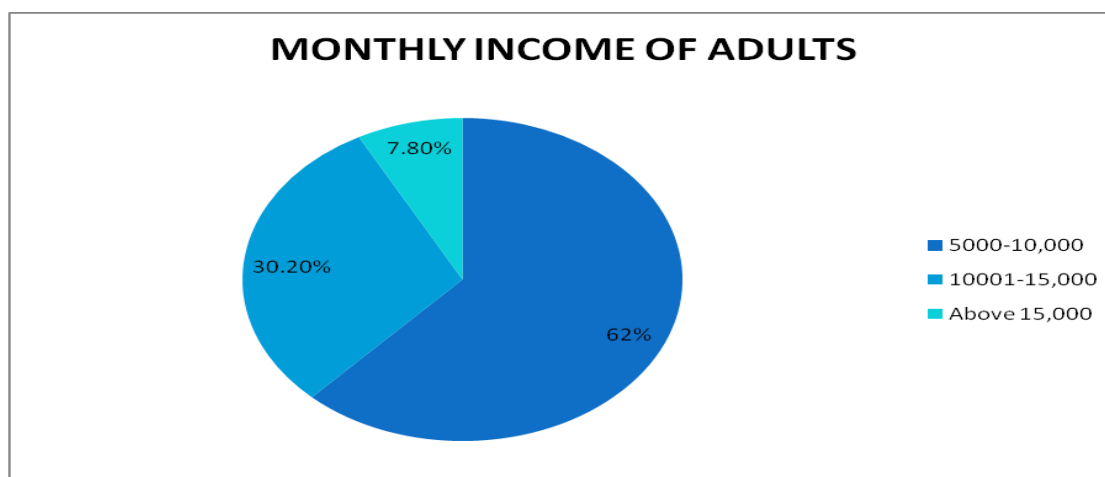


Figure 6; Pie diagram showing percentage distribution of adults according to monthly income.

Table-7 Frequency and percentage distribution of adults according to religion N=500

Demographic variables	Frequency (f)	Percentage (%)
Religion		
Hindu	341	68.2%
Muslim	141	28.2%
Christian	12	2.4%
Sikh	6	1.2%

Table-7 shows that 68.2% adults are Hindu, 28.2% adults are Muslim, 2.4% adults are Christian and 1.2% adults is Sikh.

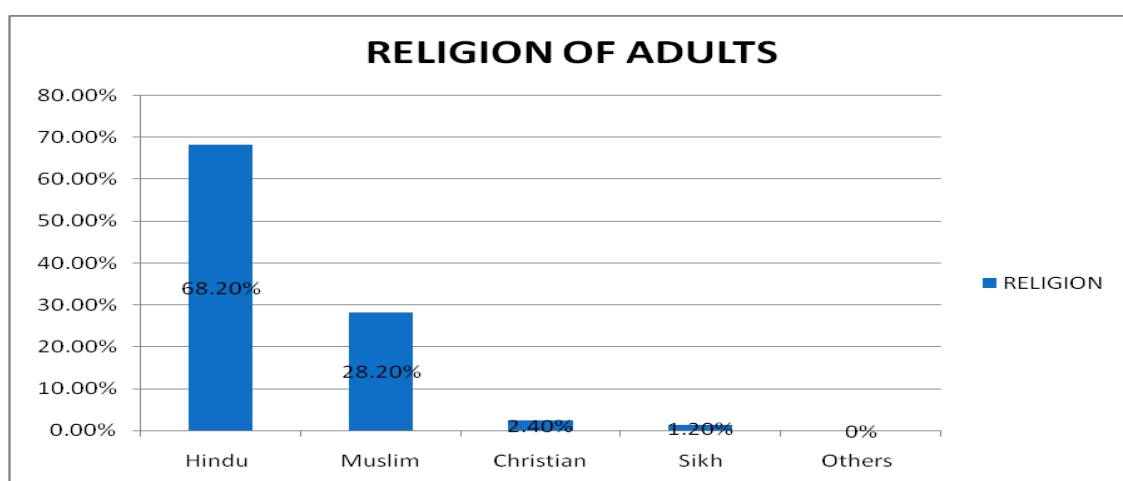


Figure -7; Bar diagram showing percentage distribution of adults according to Religion.

Table-8 Frequency and percentage distribution of adults according to source of information N=500

Demographic variable	Frequency (F)	Percentage (%)
Source of information		
Mass media	243	48.6%
Relatives	148	29.6%
Health professional	109	21.8%

Table-8 shows that 48.6% adults got information from mass media, 29.6% adults got information from relatives and 21.8% adults got from health professional.

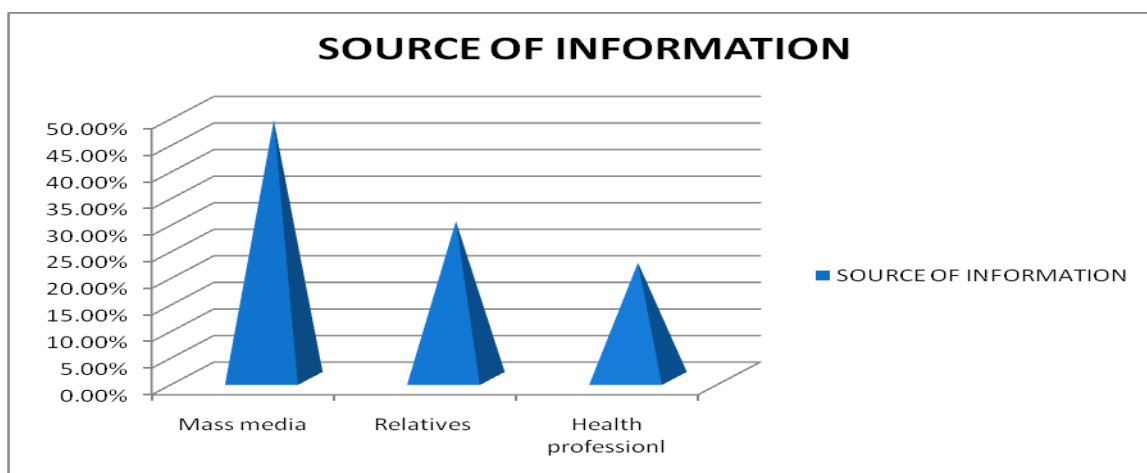


Figure -8 Bar diagram showing percentage distribution of adults according to source of information.

SECTION B: Assessment of prevalence of hypertension among adults

Table-9: Frequency percentage distribution according prevalence of hypertension. N=500

Sr. no.	Level of hypertension	Score range	Frequency (f)	Percentage (%)
1	Normal	110/70-130/80mmhg	377	75.4%
2	Moderate	140/90-160/100mmhg	112	22.4%
3	Severe	Above 160/100mmhg	11	2.2%

Table 9 shows that 75.4% adults have normal blood pressure, 22.4% adults have moderate hypertension and 2.2% adults have severe hypertension

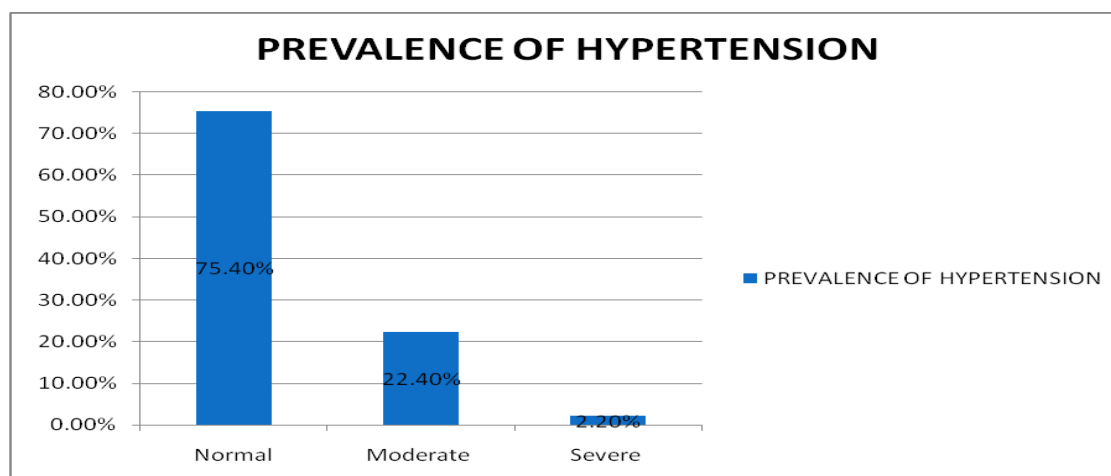


Figure-9 Column diagram showing percentage distribution of prevalence of hypertension

SECTION: C Association between prevalence with selected demographic variables.

This section represents the findings related to score range of blood pressure among adults of selected rural area.

Table-10: Association between prevalence with demographic variables. N=500

Demographic variables		Normal		Moderate		Severe		df	Chi square value	Level of significance
		f	%	f	%	f	%			
Sex	Male	220	44.4%	73	14.6%	10	2%	2	6.89	P<0.05 S*
	Female	157	31.4%	39	7.8%	1	0.2%			
Age	18-30	121	24.2%	27	5.4%	4	0.8%	8	22.93	P<0.05 S*
	31-40	121	24.2%	31	6.2%	1	0.2%			
	41-50	89	17.8%	37	7.4%	2	0.4%			
	51-60	40	8%	10	2%	2	0.4%			
	61-70+	6	1.2%	7	1.4%	2	0.4%			
Marital status	Single	97	19.4%	16	3.2%	1	0.2%	6	8.47	P>0.05

	Married	252	50%	85	17%	10	2%			NS
	Divorced	16	3.2%	6	1.2%	0	0%			
	Widow	12	2.4%	5	1%	0	0%			
Education	Never	66	13.2%	21	4.2%	3	0.6%	10	12.86	P>0.05 NS
	Primary school	100	20%	33	6.2%	3	0.6%			
	High school	64	12.8%	23	4.6%	3	0.6%			
	Intermediate	70	14%	17	3.4%	1	0.2%			
	Graduate	64	12.8%	18	3.6%	1	0.2%			
	PG	13	2.6%	0	0%	0	0%			
Occupation	Informal	59	11.8%	20	4%	3	0.6%	10	6.14	P>0.05 NS
	Formal	84	16.8%	26	5.2%	2	0.4%			
	Housewife	110	22%	36	7.2%	3	0.6%			
	Not employed	73	14.6%	22	4.4%	3	0.6%			
	Students	42	8.4%	7	1.4%	0	0%			
	Others	9	1.8%	1	0.2%	0	0%			
Monthly income	5000-10,000	234	46.8%	72	14.4%	4	0.8%	4	6.43	P>0.05 NS
	10001-15,000	112	22.4%	32	6.4%	7	1.4%			
	Above 15000	31	6.2%	8	1.6%	0	0%			
Religion	Hindu	257	51.4%	77	15.4%	7	1.4%	6	10.15	
	Muslim	107	21.4%	32	6.4%	2	0.4%			
	Christian	8	1.6%	3	0.6%	1	0.2%			
	Sikh	5	1%	0	0%	1	0.2%			
	Others	0	0%	0	0%	0	0%			
Source of information	Mass media	183	36.6%	56	11.2%	4	0.8%	4	1.51	P>0.05 NS
	Relatives	112	22.4%	31	6.2%	5	1%			
	Health professional	82	16.4%	25	5%	2	0.4%			

Key Notes: Normal = (110/70-130/80mmhg) Moderate = (140/90-160/100mmhg) Severe = (Above 160/100mmhg).

Chi – square was computed to determine the significance of association between prevalence of hypertension with selected demographic variables at 0.05 level of significance.

The above table shows that the chi- square is computed between prevalence levels of hypertension with selected

determinants		normal		moderate		severe		df	Ch square	Table value	significance
		f	%	f	%	F	%				
Smoking	Current smokers	72	14.4%	31	6.2%	3	0.6%	4	50.89	9.49	S*
	Ex smokers										
	Never smokers										
Alcohol	Current	119	23.8%	38	7.6%	7	1.4%	4	15.9	9.49	S*
	Ex alcoholic	22	4.4%	16	3.21%	1	0.2%				
	nevr	236	47.2%	58	11.6%	3	0.6%				
Physical activity	Never	164	32.8%	66	13.2%	8	1.6%	4	13.73	9.49	S*
	Mld	209	41.8%	43	8.6%	3	0.6%				
	vigorous	4	0.8%	3	0.6%	0	0%				
salt intake	low	61	12.2%	12	2.4%	1	0.2%	4	6.25		P>0.05 NS
	moderate	260	52%	82	16.4%	10	2%				
	high	56	11.2%	18	3.6%	0	0%				
Fruit	Daily	40	8%	13	2.6%	1	0.2%	4	0.77	9.49	p>0.05 NS
	Thrice a week	177	35.4%	52	10.4%	4	0.8%				
Vegetable intake	Once a week	160	32%	47	9.4%	6	1.2%	4	4.38	9.49	P>0.05 NS
	Daily	54	10.4%	14	2.8%	1	0.2%				
	Thrice a week	162	32.4%	38	7.6%	5	1%				
	Once a week	161	32.2%	60	32.2%	5	1%				

demographic variables. It shows that there is significant association between prevalence levels of hypertension with selected demographic variables like age of the adults and sex of the adults.

Section: D Table11. Association between severity of hypertension and determinants of hypertension. N=500

IV. Discussion

Major findings of the study was made under the following section

Section A- Demographical variables of adults shows that 60.6% of adults were male and 39.4% were female. 30.4% adults were from age group of 18-30, 30.6% adults were from age group of 31-40, 25.6% adults were from age group 41-50, 10.4% adults were from age group of 51-60, 3% adults were from age group of 61-70+. 22.8% adults are single, 69.4% adults are married, 4.4% adults are divorced and 3.4% adults are widow. 18% adults are illiterate, 27.2% adults having primary school education, 18% adults have high school education, and 17.6% adults have intermediate education, 16.6% adults are graduate and 2.6% adults are PG. 16.4% adults are informal workers, 22.4% adults are formal workers, 29.8% adults are housewife, 19.6% adults are unemployed, 9.8% adults are students and 2% are others, 62% adults having monthly income 5000-10,000. 30.2% adults having 10001-15,000 monthly income and 7.8% adults having above 15,000 monthly incomes. 68.2% adults are Hindu, 28.2% adults are Muslim, 2.4% adults are Christian and 1.2% adults is Sikh. 48.6% adults got information from mass media, 29.6% adults got information from relatives and 21.8% adults got from health professional.

Section B: shows that 75.4% adults have normal blood pressure, 22.4% adults have moderate hypertension and 2.2% adults have severe hypertension.

Section C: - Chi – square was computed to determine the significance of association between prevalence of hypertension with selected demographic variables at 0.05 level of significance.

Section: D - Chi – square was computed to determine the significance of association between severity of hypertension and determinants of hypertension at 0.05 level of significance.

V. Conclusion

Community nurse should make awareness about healthy lifestyle among the community people should involve them in regular health education session should conduct special lectures on prevention of NCDs (non communicable diseases) in CHC, PHC and community to increase the public awareness. The main focus of nursing administration was to organize seminars, workshops and other educational programs for staff nurses as a part of in- service education program by which knowledge towards hypertension and its prevention would be enhanced.

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