

A STUDY OF PREVALENCE OF HYPERTENSION AND SOCIO DEMOGRAPHIC FACTORS IN ELDERLY POPULATION IN A FIELD PRACTICE AREA OF A RURAL MEDICAL COLLEGE AND HOSPITAL



Community Medicine

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ABSTRACT

Background: More than half of the geriatric people are suffering from some type of diseases. Certain health problems develop with increasing age like hypertension, diabetes mellitus, cardiovascular diseases, cerebrovascular accidents, obesity, dyslipidaemia and various malignancies. Among the above diseases Hypertension is one of the most important disease in elderly. The prevalence of hypertension is rapidly increasing in developing countries. Few studies have been carried out to determine the prevalence of hypertension among rural folks. The present study was undertaken to measure the prevalence of hypertension socio demographic factors in elderly population in a field practice area of a rural medical college and hospital. **Aim and objective:** To study of prevalence of hypertension and socio demographic factors in elderly population. **Material and Methods:** A community based cross sectional study was carried out in all elderly population of a rural field practice area of S.R.T.R.M. College, Ambajogai Maharashtra from January 2016 to December 2017. The socio demographic data collected by house to house survey from those who fulfilled the inclusion criteria. Prestructured questionnaire was used to collect data from study subjects. All elderly according to inclusion criteria, residing in field practice area of medical college were included in study & 394 elderly were enrolled. **Results:** Out of 394 subjects 127 were hypertensives giving the prevalence of hypertension as 32.23%. Significant association was observed between socio demographic factors like age, socioeconomic class and occupation with hypertension.

KEYWORDS

Hypertension, Prevalence, Elderly, Sociodemographic Factors

INTRODUCTION:

Ageing is a natural process. In the words of Seneca "Old age is an incurable disease", but more recently Sir James Sterling Ross commented that "You do not heal old age you protect it: you promote it; you extend it".¹ Giving due importance to the issue of "Ageing and health" WHO has kept it theme for the year 2012 as "Good Health Adds Life to Years".² Aging has been defined as progressive, generalized impairment of function leading to loss of adaptive response to stress and growing risk of age related diseases, resulting in progressive increase in age specific mortality.³ The ageing elderly can be categorized into three broad groups — the functionally independent, frail, and the functionally dependent. The burden of chronic diseases is heaviest among frail and functionally dependent elderly people.⁴

More than half of the geriatric people are suffering from some type of diseases. Certain health problems develop with increasing age like hypertension, diabetes mellitus, cardiovascular diseases, cerebrovascular accidents, obesity, dyslipidaemia and various malignancies.⁵ Among the above diseases Hypertension is one of the most important disease in elderly. The prevalence of hypertension is rapidly increasing in developing countries. It is said to be one of the leading cause of death and disability. According to 2011 census 8% are of age 60 years and above⁶ and three fourth of elderly population lives in India.⁷ Prevalence of hypertension in India varies from 17% to 21% in all states with marginal rural and urban differences.⁸ It was estimated that by year 2015 the majority of elderly people worldwide will reside in developing countries.^{9,10} Many studies have not been carried out to determine the prevalence of hypertension among rural folks and the contributing risk factors if any. The present study undertaken to measure the prevalence of hypertension and to identify risk factors responsible with reference to medical social and individual characteristics with a view to formulate preventive measures especially applicable to rural population.

Few studies were carried out to determine the prevalence of hypertension among rural folks and the contributing socio demographic factors if any. The present study was undertaken to measure the prevalence of hypertension and to identify socio demographic factors associated with hypertension with a view to formulate preventive measures especially applicable to rural population.

MATERIALS AND METHOD:

Study type: It was a Community based, cross sectional type of study.

Study area: The area for the study was Field practice area of medical college, which was approximately 1.5 km away from Medical College. By natural landmarks, this community was divided into six wards.

Study population and period:

All elderly i.e. above 60 years were included in this study. Study Period was from January 2016 to December 2017. All elderly according to inclusion criteria, residing in field practice area of medical college were included in study & 394 elderly were enrolled. Materials used were pretested semi structured questionnaire, mercury sphygmomanometer, stethoscope, standard measuring tape, weighing machine.

Blood pressure was measured with a standard sphygmomanometer which was regularly checked and used same throughout the period of data collection. A standard microtone stethoscope was used to measure the blood pressure and clinical examination. The weight was taken on portable weighing machine with calibrated scale marked from 0 to 120 kilogram. All the elderly of 60 years of age and above were first enlisted from house to house survey with the help of Voter ID, Aadhar card, Driving License, domicile certificate etc. like available records. At the start of data collection, the first house was selected by lottery method and thereafter, house to house visits were done. The methodology comprised of interview. Detailed information of study subject like name, age, sex, religion, marital status, education, occupation, type of family, socioeconomic condition was taken.

Procedure of measurement of blood pressure:

Subjects were reassured before examination, told about instrument, nature of act of taking blood pressure so as to reduce apprehension. The blood pressure readings were taken by a single observer for every individual as per guidelines given by WHO 1978¹¹ throughout the study. All readings were taken on right arm. Subject was asked to sit on chair then first blood pressure reading was taken.¹¹

The forearm was kept at the level of heart. The manometer was placed on horizontal surface. The sphygmomanometer was kept at eye level to avoid effect of parallax. The cuff was tightened firmly to the right arm and brachial pulse was located in cubital fossa. Systolic blood pressure was recorded by palpatory method to rule out auscultatory gap. Systolic blood pressure was taken as the pressure at which the ear distinguishes the first arterial sound. The point at which last arterial sound disappeared was taken as diastolic blood pressure. If the sound did not

disappear, the sound at which the sound becomes muffled was taken as diastolic blood pressure. The reading was made at the close 2 mm. mark on scale. Then thereafter two more readings of blood pressure were recorded subsequently. The lowest of three blood pressure reading was utilized for analysis.¹¹ after every 200 readings, sphygmomanometer was calibrated with a new sphygmomanometer.

Cut off point:

7th report of joint committee on prevention, detection, evaluation and treatment of high blood pressure was used.³⁵ Criteria was taken as systolic blood pressure equal to or more than 140 mm. Hg. together with diastolic pressure equal or more than 90 mm.

RESULTS:

Out of 394 subjects 127 were hypertensives giving the prevalence of hypertension as 32.23%

Table No. 1: Distribution of hypertensive Subjects according socio demographic factors

Socio demographic factors	Normo tensi ve		Hypertensi ve		Total	Prevalence of hypertension	P value
	No.	%	No.	%			
Age group							
60-69	178	66.67	63	49.61	241	26.41%	0.005
70-79	81	30.33	58	45.67	139	41.73	
≥80	8	3	6	4.72	14	42.86	
Sex							
Male	130	48.69	59	46.46	189	31.22	0.67
Female	137	51.31	68	53.54	205	33.17	
Religion							
Hindu	139	52.06	60	47.24	199	30.15	0.62
Muslim	32	11.99	15	11.81	47	31.91	
Buddhist	87	32.58	48	37.8	135	35.55	
Others	9	3.37	4	3.15	13	30.77	
Type of family							
Nuclear	69	25.84	31	24.41	100	31	0.77
Joint	150	56.18	76	59.84	226	33.63	
Three Generation	48	17.98	20	15.75	68	29.41	
Education							
Illiterate	170	63.67	85	66.93	255	33.33	0.81
Primary	58	21.72	23	18.11	81	28.39	
Secondary	22	8.24	12	9.45	34	35.29	
Higher Secondary and above	17	6.37	7	5.51	24	29.67	
Socio economic status							
Upper class	8	3.00	11	8.66	19	57.89	0.047
Middle class	118	44.19	55	43.31	173	31.79	
Lower class	141	52.84	61	48.03	202	30.2	
Occupation type							
Non-agricultural labourer	102	38.2	39	30.71	141	27.66	0.017
Agricultural owner/labourer	57	21.34	21	16.54	78	26.92	
Unemployed/housewife	83	31.09	60	47.24	143	41.95	
Own business	8	3	4	3.15	12	13.33	
Other	17	6.37	3	2.36	20	15	
Marital status							
Married	185	69.29	79	62.21	264	29.92	0.16
Widow/widower	71	26.59	45	35.43	116	38.79	
Separated	11	4.12	3	2.36	14	21.43	

Out of 127 hypertensives; 63 (49.61%) were from age group of 60-69 years, 58 (45.67%) were from 70-79 years of age group and 06 (4.72%) were above 80 years. The prevalence of hypertension was found 26.41% in the age group of 60-69 years, 41.73% in 70-79 years and 42.86 % in age group above 80 years. Chi square showed significant association between age group and prevalence of hypertension. Prevalence of hypertension was 31.22 %, 33.17% in males and females respectively thus female were having more prevalence of hypertension than male. Chi square test revealed that there was no statistical association between sex and hypertension. The prevalence of hypertension was 30.15% in Hindus, 31.91% in Muslims, 35.55% in Buddhists and 30.77% in others. The Prevalence of hypertension was 31 %, 33.63% and 29.41% in nuclear, joint and Three generation families respectively. The prevalence of hypertension was 33.33%, 28.39%, 35.29% and 29.67% in illiterate, who studied up to primary, secondary and higher secondary class respectively. No significant association was observed in education and hypertension. The prevalence of hypertension was 57.89%, 31.79% and 30.20% in upper class, middle class and lower class. Significant association was found between socio economic class and hypertension. The prevalence of hypertension was 27.66%, 26.92%, 41.95%, 13.33% and 15% in non-agricultural labourers, agricultural owner/labourers, unemployed/housewives, who having own business and others respectively. The prevalence of hypertension was 29.92%, 38.79%, 21.43% in married, widow/ widower and separated respectively. There was no significant association between marital Status and hypertension.

DISCUSSION:

In the present study, out of 394 elderly; 127 were hypertensives giving the overall prevalence of hypertension as 32.23%. Similar results were found in **Borra S¹¹ et al (2015)** 32% and **Thakur R¹² et al (2013)** 34.8%. Age specific prevalence was found to be 26.41% in the age group of 60-69 years, 41.73% in the age group of 70-79 years and 42.86 % in the age group above 80 years. Significant association was found between the age and hypertension. **Kalavathy M.C¹³. et al (2000)** study showed that the prevalence of hypertension in age group below 70 years was 47.7%, 51.9% in age group between 70 to 79 and above 80 years it was 65.4%. **Arlappa N¹⁴ et al (2014)** study found overall prevalence of hypertension 50.1%, in 60 to 69 age group 47.6%, in 70 to 79 age group 54.0% and in above 80 years was 62.9%. **Alam M¹⁵ et al (2015)** showed the prevalence of hypertension in age group of 60 to 74 was 47.2%, in 75 to 84 years of age group it was 67.5% and in above 85 years, it was 33.33%. Most of these studies showed that the prevalence of hypertension increases with age which was similar to the present study. The difference in prevalence of hypertension may be due to different categories of age group and presence of different causative factors. In the present study Prevalence of hypertension was 31.22 %, 33.17% in males and females respectively. **Chinnakali P¹⁶ (2012)**, in this study it was revealed that prevalence of hypertension among male subjects was 39.2% whereas it was 40.8% among female subjects. **Kamble SV¹⁷ et al (2012)** study found prevalence of hypertension in females (26.34%) was more than in males (21.56%). All above studies showed more prevalence of hypertension in females than males and this finding was similar to the present study but no study showed significant association. There was no significant association between religion and hypertension in the present study but **Kashyap V¹⁸ et al (2015)** and **Kishore J¹⁹ et al (2016)** found significant association between religion and hypertension. It may be due to different socio demographic distribution of religion and difference in causative factors. Significant association was found between factors like socioeconomic class , type of occupation and hypertension similar results were found in **Singh R²⁰ et al (2014)** and **Bartwal J²¹ et al study**.

In the present study, prevalence of hypertension was 33.33%, 28.39%, 35.29% and 29.67% in illiterate, who studied up to primary, secondary and higher secondary and class respectively. There was no any significant association between education and hypertension. **Singh T²² (2017) study**, **Madhu²³ (2013)** study also showed higher prevalence of hypertension in illiterate than literate due to lack of knowledge about the disease. There was no significant association between marital Status and hypertension in this study. Similar results were found in studies **Parikh S²⁴ et al 2011** and **Srikanth J²⁵ et al (2015)**.

CONCLUSION:

The factors like age, occupation, socio economic class were significantly associated with hypertension and the factors like sex, religion, type of family, marital status were not significantly associated

with hypertension. As prevalence of hypertension is increasing in rural area preventive measures should be taken in rural area.

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