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Original Research Article

Prevalence of hypertension in a rural community of coastal Karnataka: a cross sectional study

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ABSTRACT

Background: Hypertension is major risk factor for CVDs and its complications account for 9.4 million deaths worldwide every year. Hypertension itself is responsible for about 45% and 51% deaths due to heart disease and stroke respectively. Hypertension is a major public health concern in India both in urban and rural areas and it is increasing at an alarming rate in rural population. Because of inadequate access to health care facilities at rural areas, the early screening and treatment of hypertension is not done regularly, so we conducted this study. The objective of the study was to determine the prevalence of hypertension in a rural community of coastal Karnataka.
Methods: A community based cross sectional study was conducted at rural field practice area of Srinivas Institute of Medical Sciences. Sample size was 300 and convenient sampling method used. Data was collected visiting homes and blood pressure measured with mercury sphygmomanometer by. Descriptive statistics were used to analyse the data.
Results: Among 300 participants, 45% and 55% were males and females respectively and mean age of the participants was 50.6±15.4 years. The overall prevalence of hypertension among them was 18% and the proportion of hypertension was more among males, people aged >45 years and illiterates.
Conclusions: Our study shows that, hypertension has seeped into rural population also which was a concern of the urban population earlier. New cases of hypertension diagnosed were also more which indirectly indicates, most people are not aware of their blood pressure and importance of regular monitoring of blood pressure. So, doing regular screening and creation of awareness at rural areas will help in reducing the morbidity and mortality due to hypertension and its complications.

Keywords: Hypertension, Prevalence, Rural, Coastal Karnataka

INTRODUCTION

Cardiovascular disease (CVDs) accounts for approximately one third of total deaths globally (17 million deaths a year). Hypertension (HTN) is a major risk factor for CVDs, hypertension and its complications account for 9.4 million deaths worldwide every year. Hypertension is responsible for about 45% deaths due to cardiac disease and 51% of deaths due to stroke.[1]

Among the total deaths of CVD, almost one third of CVD deaths are occurring in low and middle-income countries (LMIC) because of lack of access and unequitable distribution of primary health care facilities which are necessary for early diagnosis and treatment of the hypertension and its complications. Because of this, many people in LMIC will be detected very late in the course of disease and die at younger age from cardiovascular diseases.[2]

World Health Organisation (WHO) statistics of 2015 shows that, the prevalence of hypertension among adults (≥18 years) in India is 25.35% (25.9% males and 24.8% females).[3]

Earlier, hypertension was a major problem of urban population but now it has spread to rural areas also and now it has become a major public health concern in India both in urban and rural areas. The systemic reviews of the pooled epidemiological studies of India shows HTN prevalence of 29.8%, whereas it was 33.8% in urban areas and 27.6% in rural areas of India.[4] The prevalence of hypertension among the rural population is increasing very fast owing changes in food habits, sedentary life style and increased usage of tobacco.

Due to lack of awareness and lack of access to health care facilities at rural areas, the screening and treatment of hypertension is not done regularly, so we conducted this study with an objective to determine the prevalence of hypertension in a rural community of coastal Karnataka.

METHODS

Study design

It was a cross sectional study.

Study setting

Study was conducted in a rural field practice area of Department of community Medicine, Srinivas Institute of Medical Sciences and Research Centre.

Study population

The people those who aged 25 years and above in the rural field practice area were included in the study.

Inclusion criteria

The people who were aged 25 years and above and those who were willing to participate were included in the study.

Exclusion criteria

The people with pregnancy and those who were not willing to participate were excluded.

Study duration

2 Months (November – December 2015).

Sample size

The prevalence of Hypertension in according to WHO 2015 statistics in India was 25.35%.[3] The sample size was calculated using the formula $n=4pq/d^2$ (where p is prevalence, q=100-p and d is allowable error) with an allowable error of 20%. The sample size derived was 294 which were rounded off to 300.

Sampling method

A convenient sampling method was used to collect data. The data was collected by house to house visit with the help of health workers.

Data collection

The study was conducted after taking ethical clearance from the Institutional Ethics Committee. Data was collected after explaining the purpose of the study and taking informed written consent from those who were willing to participate in the study. The data was collected by using a proforma which included basic socio-demographic details and measurement of blood pressure (BP). Blood pressure was measured twice with mercury sphygmomanometer by following all the standard protocol of Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC VII) and used the cut of SBP≥ 140 mm Hg or DBP≥90 mmHg as hypertensive as per JNC VII guidelines.[5]

Data analysis

Data was entered in Microsoft Excel, descriptive statistics were analysed and presented in the form of frequencies and proportions using EpiData Analysis V2.2.2.182.

RESULTS

A total of 300 persons were participated in the study and mean age of the participants was 50.6±15.4 years. Among the study subjects, 45% (135) and 55% (165) were males and females respectively. Among the participants, majority were Hindus (83.3%), 98.7% were married, 58% were illiterate, 45% and 38% were housewives and farmers respectively (Table 1).

Incidence and prevalence of hypertension

Among 300 participants, around 7% (21) people were had history of hypertension before the study itself, 14.34% (43) were newly diagnosed with hypertension after screening and the overall prevalence of hypertension in the study population was 18% (26.4% and 11.4% males and females respectively). Among the hypertensives, the proportion of hypertension was more among males (64.8%), the persons aged more than 45 years (68.5%) and illiterates (51.9%) (Table 2).

The mean systolic BP and diastolic BP of the participants were 125.2±15.4 mm of Hg and 80±9.7 mm of Hg respectively.

Table 1: Socio-demographic profile of the participants based on the gender distribution.

Socio-demographic profile	Gender		Total
	Male n (%)	Female n (%)	
Age group			
Less than 45 years	59 (40.7)	86 (59.3)	145
More than 45 years	76 (49.0)	79 (51.0)	155
Marital status			
Married	133 (44.9)	163 (55.1)	296
Not married	2 (50.0)	2 (50.0)	4
Education status			
Illiterate	73 (42.0)	101 (58.0)	174
Primary school	20 (40.0)	30 (60.0)	50
High school	20 (51.3)	19 (48.7)	39
Graduation	19 (70.4)	8 (29.6)	27
Post-Graduation	03 (30.0)	7 (70.0)	10
Total	135	165	300

Table 2: Distribution of the participants based on the hypertension.

	Hypertension		Total
	Yes n=54, n (%)	No n=246, n (%)	
Gender			
Male	35 (64.8)	100 (40.7)	135
Female	19 (35.2)	146 (59.3)	165
Age Group			
Less than 45 years	17 (31.5)	128 (52.0)	145
More than 45 years	37 (68.5)	118 (48.0)	155
Education Status			
Illiterate	28 (51.9)	146 (59.3)	174
Primary school	07 (13.0)	043 (17.5)	050
High school	06 (11.1)	033 (13.4)	039
Graduation	13 (24.1)	014 (05.7)	027
Post-graduation	0 (0)	10 (04.1)	010

DISCUSSION

The overall prevalence of hypertension among the study population in our study was 18% and newly diagnosed hypertension was 14.34%, this prevalence was lesser than WHO statistics 2015 for India which was 25.35%, study done by Satheesh et al (21%) and study done by Chow et al which showed prevalence of 30.7% for India (Rural-31.5%).[3,6,7] this prevalence was similar to study done by Iliyas MC which showed the prevalence as 18.5%.The systemic reviews of pooled epidemiological studies of India done by Anchala et al showed a prevalence 27.6% for rural areas of India and 21.1% for rural areas of South India which were more than our study.[4]

A study conducted by Galav et al in rural areas of Rajasthan was found prevalence of hypertension as 18.7%, study done by Kokiwar et al in rural part of Central India showed a prevalence of 19.04%, prevalence of hypertension in rural North Kerala was 18.5% in the study done by Satheesh et al and a study done in rural areas of South India by Yuvraj et al found a prevalence of 18.3% which are all similar to the prevalence of hypertension found in our study.[8–11] A other studies conducted in rural areas of Jaipur by Kumar K et al and in Maharasthra by Todkar et al found a prevalence of hypertension as 13.17% and 7.24% respectively which were much lower compared to our study.[12,13]

The prevalence of hypertension among males and females was 25.9% and 11.5% respectively which was similar to studies done by Sathees et al and slightly higher for males in our study compared to other studies.[6,8-11]

The prevalence of hypertension was found to be more among the illiterate persons in our study which indirectly shows the lack of awareness of the people about screening for hypertension and benefits of early diagnosis.

The prevalence of hypertension was more among the persons aged more than 45 years which was slightly higher compared to studies done by Yuvraj et al and Kumar et al and was similar to other studies.[6,8,9,11,12]

Limitations of the study was using of convenient sampling method.

CONCLUSION

By this study, we observe that, hypertension has seeped into rural population also which was a concern of the urban population few decades earlier. New cases of hypertension diagnosed were also more which indirectly indicates, most people are not aware of their blood pressure and importance of regular monitoring of blood pressure. Early detection and treatment initiation is the key to decrease the morbidity and mortality associated with hypertension. So, doing regular screening and strengthening of basic health facilities along with creation of awareness at rural areas will help in reducing the morbidity and mortality due to hypertension and its complications.

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