



A Study on Prevalence of Hypertension Among Patients Attending OPD of National Institute of Unani Medicine, Bengaluru, India.

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Abstract

Introduction: Hypertension is the leading modifiable cause of premature death and hence World Health Organization (WHO) has made it one of its global prevention priorities. It is a major risk factor for stroke, myocardial infarction, vascular disease, and chronic kidney disease. The prevention and treatment of hypertension imposes a significant public health challenge owing to its related morbidity and mortality as well as the expense to society. Hypertension is referred to as a silent and an invisible killer and affects at least 1.4 billion people globally. Less than half of adults (42%) with hypertension are diagnosed and treated.

Methodology The research design was an institution based single centered, observational descriptive study, cross sectional in design and was carried out for a duration of 28 days (4 weeks) from 01.06.2024 to 29.06.2024. The study was conducted in the Outpatient Department (OPD) of Regimenal therapies, National Institute of Unani Medicine (NIUM), Bengaluru. All people above 21 years of age attending OPD constituted study population. In present study, 524 patients were included in the study. The diagnosis of hypertension was done as per WHO guidelines. Data analysis was done using SPSS version 24.

Results: The study revealed that prevalence of hypertension was 35.87% in the study population. In the present study, 53.20% of diagnosed hypertensive patients were females and rest 46.80% were males. Majority of diagnosed hypertensive patients (39.89%) belonged to the age group of above 60 years.

Conclusion: Prevalence of hypertension is significantly increasing at a greater pace globally as well as in India. Periodic screening and raising awareness about hypertension in general population is necessary to reduce the prevalence of the disease and thereby the associated morbidity and mortality.

Keywords: Hypertension, WHO, Prevalence, SPSS, OPD patients.

INTRODUCTION

Hypertension is one of the most leading modifiable cardiovascular risk factors, influencing health, disease and death and hence one of the global targets of World Health Organization (WHO) for prevention¹. It is one of the most common non-communicable diseases treated in primary care and if left untreated, can lead to various serious complications like myocardial infarction, stroke, renal failure, and death². It is considered as a primary cause for cerebrovascular (51%) and cardiovascular (45%) mortality³. It is prevalent in the majority of developed, underdeveloped, and developing countries. In Asia, the prevalence ranges from 20.8% in Taiwan to 50.3% in Pakistan⁴. In India, the prevalence of hypertension is about 29.8% with significant variation in between rural and urban areas [27.6% [23.2-32.0] and 33.8% [29.7-37.8]; $P=0.05$]⁴. Often called a silent killer, hypertension is common in the elderly; in 2015, it has been the leading cause for premature death of nearly 10 million patients with systolic blood pressure (SBP) over 110–115 mmHg, including approximately 4.9 million patients with ischemic heart disease, 2.0 million patients who suffered from hemorrhagic

stroke, 1.5 million patients who suffered from ischemic stroke, and 1.6 million patients with other CVD (Forouzanfar et al, 2017)⁵. Many countries have implemented large-scale programs to diagnose and manage hypertension and other chronic diseases, with varying success^{6,7}. Of more than 1.3 billion people with hypertension globally, 82% live in low- and middle income countries, and India alone is home to an estimated 220 million adults with hypertension^{8,9}. To address the burden of noncommunicable diseases, India has launched the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke in 2010 (now known as the National Programme for Prevention and Control of Non-Communicable Diseases) under the National Health Mission for 100 districts across 21 states¹⁰. The literature on the prevalence of hypertension in south India, more specifically in Bengaluru, was scarce and thereby, the present study was undertaken to provide the data on the prevalence of hypertension amongst adults who were aged 21 years and above, who attended the OPD of the National Institute of Unani Medicine, Bengaluru.

MATERIALS AND METHODS

Present study was an Institution based, single centered, observational descriptive study, cross sectional in design and was conducted in OPD of Department of Regimenal therapies, National Institute of Unani Medicine, Bengaluru, Karnataka for a duration of 28 days (4 weeks) from 01.06.2024 to 29.06.2024. All patients above 21 years of age attending to OPD constituted study population. As all new patients presenting to the OPD for consultation were randomly distributed by a computerized patient management system among all the doctors present for the day, we expected our subjects to be representative of the overall patient population presenting to the hospital. In present study, 550 patients attended the OPD during the period of study. Out of 550 patients, only 524 patients met the inclusion criteria and rest 26 were excluded as shown in Figure A. The survey containing

items to assess socio demographic profile like age, sex, identification data, education were collected by semi structured questionnaire. Analysis and measurement of blood pressure was done by using a standard and calibrated BP apparatus. Patients were asked to take rest for 2 minutes prior to BP measurement. Patients were in sitting position during blood pressure measurement. Hypertensive subjects were defined as those with systolic blood pressure (SBP) equal to or more than 140mmHg and/or diastolic blood pressure (DBP) equal to or more than 90mmHg or those being treated for hypertension¹¹. Each selected subject was given explanation about the procedure and objectives of the study. The prior ethical clearance for the study was obtained from the institutional ethics committee. Data analysis was done using SPSS version 24. The results were explained in simple proportions.

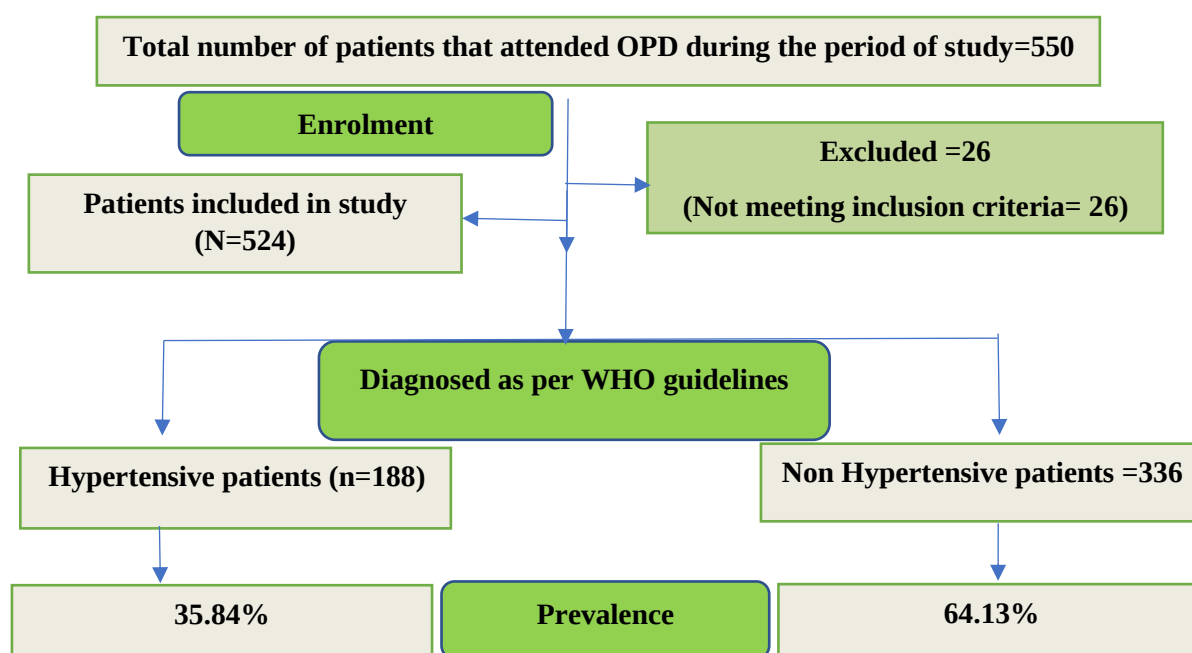


Figure A: showing study design.

RESULT

An observational descriptive cross-sectional study was conducted among 550 patients attending the general OPD of regimenal therapies, National institute of Unani Medicine, Bengaluru from 01.06.2024 to 29.06.2024. Of the 550 patients that attended the OPD, 26 patients did not meet the inclusion criteria and were excluded. Remaining 524 patients constituted the study population. The following findings were observed: Figure B demonstrated that out of 524 patients who visited the hospital, 35.87% (188) patients had hypertension or were those, taking anti-hypertensive medications. Table 1 revealed socio demographic profile of the study population. About 39.89% of the participants having hypertension belonged to the age group of above 60 years, 32.44% belonged to age group of 51-60 years and 19.14% to 41-50 years as shown in Figure C. 53.20% patients were females while the rest 46.80% were males. As far as educational status is concerned, 34.04% patients having hypertension were illiterate; 25.5% had primary level of education; 19.68% had secondary level; 17.02% had senior secondary level and only 3.72% had an educational qualification of graduation and above. Regarding medical comorbidities, about 28.19% of hypertensive patients had diabetes mellitus, 15.42% had

thyroid disease, 11.79% had some cardiac disease, 6.91% had some diagnosed kidney disease and 44.14% had some other diseases. This study revealed an association of hypertension with diabetes, heart disease, kidney disease, thyroid disease and other diseases including chronic pain, migraine, gastritis etc. (p value<0.05) as shown in Figure D below.

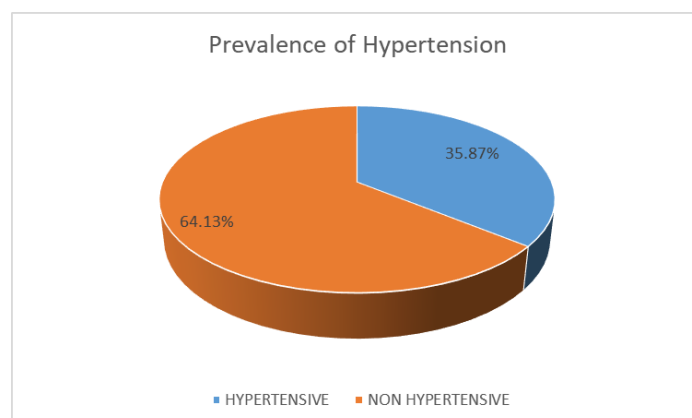
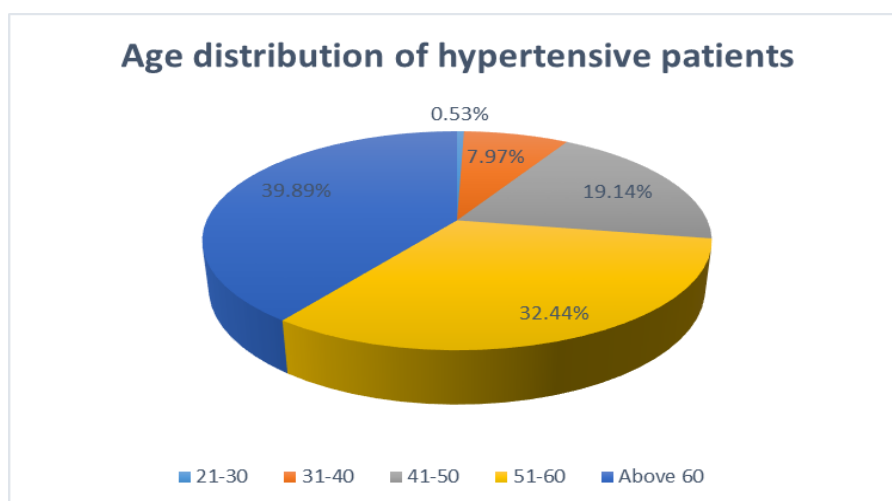


Figure B: Pie diagram showing prevalence of hypertension among sample population. (N=524)

TABLE 1: Distribution of the study population according to socio demographic variables (N=584),(n=188).

S.No	Socio demographic variables	Hypertensive patients(n)	Percentage of hypertensive subjects	Total subjects (N)	Prevalence %
1	AGE (years)				
	21-30	1	0.53%		
	31-40	15	7.97%		
	41-50	36	19.14%		35.87
	51-60	61	32.44%		
	Above 60	75	39.89%		
	TOTAL	188			
2	SEX				
	Male	88	46.80%		
	Female	100	53.20%		35.87
	TOTAL	188			
3	EDUCATIONAL STATUS				
	Illiterate	64	34.04%		
	Primary	48	25.5%		
	Secondary	37	19.68%		
	Senior secondary	32	17.02%		
	Graduate	7	3.72%		
	TOTAL	188			35.87
4	MEDICAL CO MORBIDITIES				
	Diabetes mellitus	53	28.19%		
	Thyroid disease	29	15.42%		
	Heart disease	13	6.91%		
	Kidney Disease	6	3.19%		
	Liver disease	4	2.12%		
	Others(Arthritis,gout, chronic pain,migraine, gastritis etc.)	83	44.14%		35.87
	TOTAL	188		524	

**Figure C: Pie diagram showing age distribution of diagnosed hypertensive patients of sample population.(n=188)**

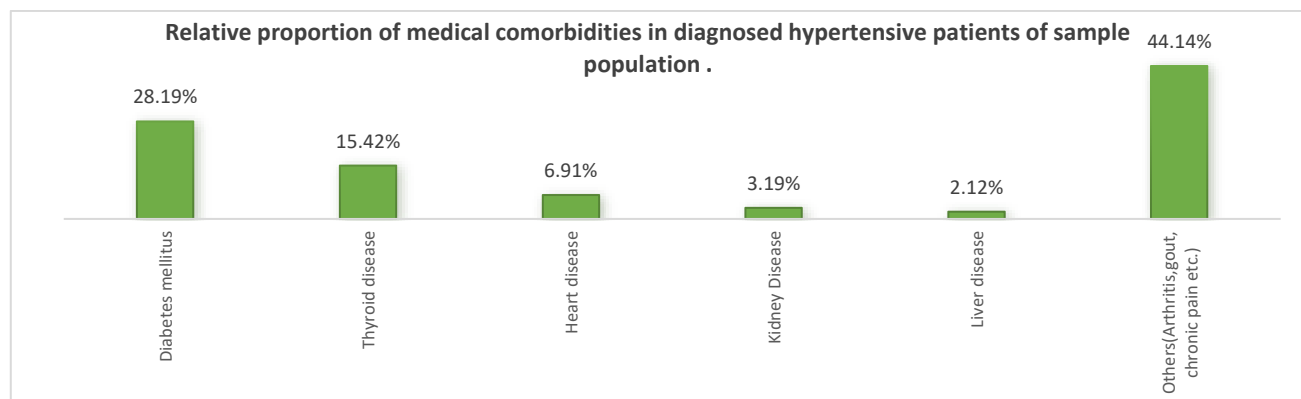


Figure D: Column diagram showing relative proportion of medical comorbidities in diagnosed hypertensive patients of sample population. (n=188)

DISCUSSION

Elevated blood pressure (BP) has become the primary risk factor for morbidity and mortality worldwide. According to the most recent version of the Global Burden of Diseases (GBD) study, high systolic BP is one of the main risk factors for both morbidity and mortality¹². The GBD study 2017 has shown that non-optimal BP continues to be the biggest single risk factor contributing to the global burden of disease and to global all-cause mortality, accounting for 10.2 million [95% uncertainty intervals (UI) 9.16–11.3 million] deaths and 208 million (UI 188–227 million) disability adjusted life years (DALYs). Overall, 8.61% (UI 7.66–9.56) of total DALYs were attributable to high SBP¹³. The World Health Organization (WHO)¹⁴, the GBD study¹⁵, and the Non-Communicable Disease Risk Factor Collaboration (NCDRisk)¹⁶ have reported that the prevalence of hypertension is rising worldwide, with over 1 billion people currently affected (standard criteria define hypertension as systolic blood pressure of at least 140 and/or diastolic blood pressure of at least 90 mm Hg). In India also, it has emerged as the most important risk factor for deaths and disability¹⁷. Global Burden of Diseases study reports that hypertension associated mortality and morbidity in India is one of the highest in the world and is increasing¹⁸. Some recent research has identified the true prevalence of hypertension in India. With an overall frequency of 11.3%, the National Family Health Surveys-4 (NFHS-4) revealed that 13.8% of men and 8.8% of women had hypertension. According to the District Level Household Surveys-4 (DLHS-4), hypertension affects 25.3% of adults with a greater prevalence in men as compared to women (27.4% vs. 20.0%) with a narrow urban-rural difference. With an age-adjusted prevalence, this would translate into 207.11 million persons (men 112.15 million, women 94.96 million) with hypertension in the country¹⁹.

Our study findings confirmed that hypertension is common in adult Indian general population. The present study depicted that there is a persistent burden of hypertensive patients with significant prevalence among hospitals. The overall prevalence of hypertensive patients was 35.87%; which can be compared with some previous studies conducted in India and abroad.^{20,21,22}. Our study findings were coherent with the study conducted by Rakesh et al.²⁰ regarding hypertension in urban slums of southern India. The prevalence of hypertension was found to be 34.8% (95% CI 33.5–34.9), which is approximately similar to our study and thereby supports the present study. A study by Raghupathy et al.²¹ regarding prevalence, awareness, and control of hypertension in India revealed the prevalence of hypertension was 25% to 33%; which was corroborative with the result of the present study. A compatible prevalence of hypertension among individuals aged 15–49 years was reported (40.6%) in a study

by Abariga et al.²² in India, based on the 2017 ACC/AHA classification. According to the District Level Household Surveys-4 (DLHS-4), hypertension affects 25.3% of adults with a greater prevalence in men as compared to women, which is consistent with our study (53.20% vs 46.80%)¹⁹. Same trend was also observed by Kabir *et al.*, among the outdoor patients of Dhaka Medical College²³. In contrast, a greater proportion of hypertension was observed among males (21.6%) as compared to females (14.8%) by Visweswara et al.²⁴ in a study regarding Hypertension treatment cascade among men and women of reproductive age group in India: analysis of National Family Health Survey-5 (2019–2021). Our study depicted a relevant role of educational status in the evolution of hypertension and a strong association between lower educational status with prevalence of hypertension, which is coherent with the study conducted by T.DI CHIARA ET AL.²⁵. The proportion of medical comorbidities in diagnosed hypertensive patients of present study is supported by a study conducted by Noh J et al.²⁶ about prevalence of comorbidities among people with hypertension: The Korea National Health and Nutrition Examination Survey 2007–2013. Like other studies our study also had some limitations. These are: Institution based cross sectional study; Data from only one OPD was taken. Also, the prevalence of hypertension was high in this study that can be attributed to the fact that study population were patients who reached out to OPD for management of their morbidities while in other previous majority of studies, study population was community based

CONCLUSION

Despite being the most common non-communicable disease treated in primary care, prevalence of hypertension is still increasing at greater pace globally and it still remains largely either undiagnosed, untreated or uncontrolled in the general population. The present study provided some idea about prevalence of hypertension among patients of Bengaluru. In this study the overall prevalence of hypertension among patients who reached out to OPD of NIUM, Bengaluru for the management of their morbidities was higher (35.87%) than reported in general Indian population. This study also showed positive association between hypertension and some medical comorbidities like diabetes, thyroid disease, heart disease, kidney disease and other diseases like migraine, chronic pain and gastritis. Early detection and treatment of hypertension are vital for public health. The global morbidity and mortality rate may rise with a higher prevalence of hypertension. Periodic screening and raising awareness about hypertension are necessary to reduce the prevalence of the disease.

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Declaration of Competing Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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