"TO EXPLORE THE PREVALENCE OF HYPERTENSION"

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Abstract
Background: Hypertension is the most common cardiovascular ailment and a primary cause of cardiovascular-related deaths, accounting for 20-50% of all fatalities. Hypertension doubles the risk of developing coronary artery disease, quadruples the risk of congestive heart failure, and increases the possibility of cerebrovascular illness sevenfold. According to recent studies, the prevalence is 25% in metropolitan areas and 10% in rural locations, with rates increasing with age.
Objective: To explore the prevalence of hypertension
Duration and place of study: This study was conducted in Bilawal Medical College Hospital Kotri From March 2023 to August 2023
Methodology: This cross-sectional study included people aged 20 to 40 who had lived in the study area for six months. Subjects were chosen by a rigorous random sampling procedure. Pregnant women, those with congenital heart abnormalities, and extremely ill patients were not a part of this research.
Results: This research contained a total of 450 subjects out of which the majority of them were normotensives (n=369, 82%). Only 18% of participants were hypertensive. The study discovered that hypertension prevalence was highest in the 35-40 age group (27%), and lowest in the 20-24 age group (5.3%). The number of hypertensive people without a formal education outnumber those who are literate.
Conclusion: This study found a significant prevalence of pre-hypertension and hypertension among younger persons, particularly those aged 35-40, emphasizing the critical need for early intervention to prevent future cardiovascular disease risk.

Introduction

Hypertension is the most common cardiovascular disorder and a primary cause of cardiovascular-related deaths, accounting for 20-50% of all fatalities [1]. As a noncommunicable disease,

hypertension adds to the healthcare burden in poor countries, which are already dealing with the issues of infectious diseases [2]. Blood pressure is a continuous variable across populations, with no apparent distinction between high and normal levels. The WHO's Expert Committee defines hypertension in adults as a systolic blood pressure of 140 mmHg or higher and/or a diastolic pressure of 90 mmHg or higher [3].

Hypertension is the fourth leading cause of premature death in underdeveloped countries and seventh in industrialized ones, making it a major public health concern in the twenty-first century [4]. In India and Pakistan, almost 34% females and 35% males have hypertension [5]. According to recent studies, the prevalence is 25% in metropolitan areas and 10% in rural locations, with rates increasing with age [6]. Lifestyle changes, increased salt consumption, longer life expectancy, improved disease awareness, and higher stress levels may all play a role.

The 2% yearly population growth rate, along with technological developments, has restricted job prospects for the younger generation, adding to stress and hypertension among young people [7]. Young individuals are frequently seen as having a low risk of hypertension, owing to a dearth of evidence in this age range; most research focuses on older adults and the elderly [8]. However, with the global increase in hypertension, there is rising worry that hypertension among young adults is also on the rise and going undiagnosed due to insufficient screening [9]. Therefore, it is critical to assess the prevalence of hypertension in the younger population.

Young people's blood pressure measurements can be used to accurately forecast when adults will develop hypertension [10]. In the 20–40 age range, early detection, prevention, and treatment of hypertension are essential to halting the evolution of the condition and delaying its repercussions, which include myocardial infarction (MI), congestive heart failure, and stroke [11].

Methodology
The study included people aged 20 to 40 who had lived in the area where research was conducted of six months. Participants were chosen by a random sampling procedure. All participants provided their informed written consent prior to the interview, and the Institutional Ethics Committee approved this research.
Pregnant women, those with congenital heart abnormalities, and extremely ill patients were not a part of this research.
A pre-designed, pre-tested, semi-structured questionnaire was created to collect information based on specified criteria such as socio-demographic characteristics, socioeconomic status, and personal history. Height, hip circumference, weight, and waist were all reported. The WHO's guidelines were used to categorize body mass index (BMI) [12].

Throughout the research, the observer measured each participant's blood pressure with the same sphygmomanometer. After gaining informed consent, each participant had three readings obtained 15 minutes apart while seated. The participant's blood pressure was calculated as the average of their two systolic (SBP) and diastolic (DBP) values. If the SBP and DBP were in separate categories, the higher category was used to determine the individual's blood pressure. The measurements were taken to the nearest 2 mm Hg on the scale. Participants were classed using the JNC 8 standards.

The chi-square test was used to determine the relevance of hypertension prevalence in relation to socio-demographic parameters, whilst the odds ratio examined the strength of the link between hypertensive and normotensive individuals. A t-test was used to compare the mean values of the research variables. Data was analyzed using Epi Info version 22 and entered into Microsoft Excel.

Results

This research contained a total of 450 subjects out of which the majority of them were normotensives (n=369, 82%). Only 18% of participants were hypertensive. So, there was 18% prevalence of hypertension. Table number 1 shows the distribution of the participants according to JNC 8 criteria.

Table No. 1:

Status	N	%
Stage 1 HTN	68	15.1
Stage 2 HTN	15	3.4
Pre-HTN	232	51.5
Normal	135	30

The study discovered that hypertension prevalence was highest in the 35-40 age group (27%), and lowest in the 20-24 age group (5.3%). Furthermore, the number of hypertensive people without a formal education outnumber those who are literate. Table number 2 shows the relationship of socio-demographic variables with hypertension.

Table No. 2:

Variables	Normotensive (n=369)	Hypertensive (n=81)
Age (yrs)		
● **20 to 24**	121	7
● **25 to 29**	77	19
● **30 to 34**	65	16
● **35 to 40**	106	39
BMI		
● **Underweight**	46	2
● **Overweight**	67	12
● **Normal**	140	24
● **Pre-obese**	85	26
● **Obese class 1**	31	16
● **Obese class 2**	0	1
Socio-economic class		
● **Class I**	11	2
● **Class II**	32	10
● **Class III**	103	19

● **Class IV**	143	36
● **Class V**	80	14
Family history of HTN		
● **Yes**	258	24
● **No**	111	57
Smoking		
● **Yes**	320	66
● **No**	49	15

Table number 3 includes the outcomes of binary logistic regression analysis of independent risk factors.

Table No. 3:

Risk factors	Odds ratio	P-value
Age (yrs)		
● **20 to 30**	1	
● **30 to 40**	2.5	0.001
Family history of HTN		
● **Yes**	2.86	0.01
● **No**	1	0.03
BMI		
● **Underweight**	0.29	0.104
● **Overweight**	1.5	0.1
● **Normal**	1	
● **Obese**	3.2	0.003
Type of family		
● **Nuclear**	3.75	0.03
● **Joint**	5.6	0.01
● **3 generation**	1	
Tobacco chewing		
● **Yes**	4.5	<0.001
● **No**	1	

Discussion

In our study, the prevalence of hypertension among those aged 20 to 40 was 18%, which is consistent with a 2014-2015 study conducted in an urban slum in Mumbai, which found a prevalence of 16.2% [13]. Furthermore, a 2014 study in Chidambaram discovered a hypertension prevalence of 20.8% in the same age range [14]. This increase can be linked to increased urbanization, lifestyle changes, and the transition from agrarian to wage-earning jobs.

The highest prevalence of hypertension was discovered in the 35-40 age group, while the lowest prevalence was seen in those aged 20-24 years. Individuals between the ages of 30 and 40 were 2.5 times as likely to develop hypertension than those aged 20 to 30. A study conducted in Delhi found a similar pattern, with a higher prevalence of hypertension in the 30-40 age group (29.6%) than the 20-30 age group (14.8%), which was statistically significant [15]. This increase could be related to the buildup of environmental variables and the effects of aging on the body.

According to our research, the class IV socioeconomic category group had the highest frequency of hypertension, followed by the class III and class V groups. Similar results were found in an urban population study, which showed that the prevalence of hypertension was higher in the middle-income group (76.8%), significantly higher in the higher SES group (11.1%) and lower in the lower SES group (12.1%) [16]. The bulk of the research population was unemployed, which restricted their access to adequate health care and raised their stress levels, which may be the cause of our findings.

The study found that sedentary workers had a greater prevalence of hypertension than those who engaged in moderate or heavy physical exercise. In a research in western Maharashtra, people with sedentary lifestyles had a greater prevalence of hypertension (36.45%), followed by those with moderate exercise [17]. This could be explained by the fact that 69% of sedentary workers had a high waist-hip ratio (WHR), implying a strong relationship between hypertension, lack of physical exercise, and obesity.

In this study, hypertension was more common in tobacco chewers than in non-tobacco chewers, with tobacco chewers 4.5 times more likely to acquire hypertension. In our study, participants with stress had a higher prevalence of hypertension than those without stress. Similarly, a study conducted in Raichur discovered that 66.66% of hypertensive people experienced stress, whereas 33.34% did not, indicating a substantial link between hypertension and stress [18]. This could be attributed to persistent stress, which increases sympathetic activity and contributes to hypertension. Introducing yoga and meditation into the community may help reduce stress.

In our study, smokers had a higher prevalence of hypertension than nonsmokers. According to one study, the prevalence of hypertension among smokers was 53.06%, compared to 18.11% among nonsmokers, with a statistically significant difference [19]. In our study, persons with class 1 obesity and pre-obesity had the highest prevalence of hypertension when compared to those with a normal BMI. Similarly, a study conducted in Chidambaram discovered that the prevalence of hypertension was higher among fat people, and this relationship was statistically significant [20].

Conclusion

This study found a significant prevalence of pre-hypertension and hypertension among younger persons, particularly those aged 35-40, emphasizing the critical need for early intervention to prevent future cardiovascular disease risk.

Funding source

Conflict in the interest

The authors had no conflict related to the interest in the execution of this study.

Permission
Prior to initiating the study, approval from the ethical committee was obtained to ensure adherence to ethical standards and guidelines.

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