



A CROSS-SECTIONAL STUDY ON THE PREVALENCE OF HYPERTENSION AT PERIYERIPATTI VILLAGE, SALEM, TAMIL NADU, INDIA

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ABSTRACT

Hypertension is a major public health concern and a leading risk factor for cardiovascular diseases worldwide. This study aimed to determine the prevalence of hypertension among adults in a rural population. A cross-sectional descriptive study was conducted among 320 participants aged 30–70 years at Periyeripatti village. Data were collected using structured questionnaires and blood pressure measurements using a sphygmomanometer. Descriptive statistics and chi-square tests were used for analysis. The prevalence of hypertension was 26%. Hypertension was more common in the 51–70 years age group. Significant associations were found with a history of hypertension, medication use, and diabetes mellitus. Risk factors such as smoking, alcohol consumption, and salty food intake were also observed. Hypertension prevalence was considerable in the rural population. Regular screening, lifestyle modification, and health education are essential to reduce the burden of hypertension.

KEYWORDS: Hypertension, Prevalence, Cross-sectional study, rural population, Risk factors.

INTRODUCTION

Hypertension is a chronic medical condition characterized by persistently elevated blood pressure. It is a major risk factor for cardiovascular diseases, stroke, and kidney disease. The global prevalence of hypertension continues to increase, especially in low- and middle-income countries. Understanding the prevalence and associated risk factors is essential for prevention and control. According to World Health Organization (WHO), an estimated 1.4 billion adults aged 30-79 years worldwide have hypertension as of 2024, representing about 33 % of the population in that age range.^[1] In previous decades, e.g., in 2010 the prevalence was estimated at about 31.1 % of adults worldwide (≥ 20 years) using the threshold of systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg and/or current use of antihypertensive medication. Understanding the prevalence of hypertension within a population is essential for developing effective prevention and control strategies. The observational data suggest that delays in diagnosis or in initiating therapy are associated with

lower rates of control and higher risk of adverse outcomes. These associations support the rationale for early screening and early intervention.

OBJECTIVES OF THE STUDY

Primary Objective: To determine the prevalence of hypertension among adults aged 30–70 years.

Secondary Objective: To identify associated risk factors and awareness levels.

MATERIALS AND METHODS

Cross-sectional descriptive study was performed for this study. Before commencing the study, the research proposal was reviewed and approved by the Institutional Ethical Committee of Government Siddha Medical College, Palayamkottai. Individual informed consent was obtained from people of Periyeripatti village, Omalur Taluk, Salem District, and Tamil Nadu. A structured questionnaire was prepared in both English and Tamil languages to ensure a clear understanding by the respondents.

The questionnaire consisted of two sections

Part A: Demographic information (Age, Gender, Occupation, Marital status, etc.)

Part B: Questions related to awareness, habits, medical history, and lifestyle factors associated with hypertension.

Inclusion Criteria

Individuals aged between 30 and 70 years (Residents of Periyeripatti village).

Participants who gave their informed consent.

Exclusion Criteria

Individuals below 30 or above 70 years of age. People who were not willing to participate in the study.

Sample Size: 320 participants.

Sampling Technique: Convenience sampling technique.

Data Collection: Questionnaire method. Individual's blood pressure was monitored by using sphygmomanometer.

Data Analysis: Data were analyzed using descriptive statistics and chi-square test. Significance level set at $p < 0.05$.

Ethical Consideration: The study has been approved by the Institutional Ethical Committee of Government Siddha Medical College, Palayamkottai (IEC No: GSMC-XV-IEC-Br II/01/15.04.2025).

PROCEDURE

The questionnaire consists of two parts. Part A consists of 5 demographic questions. Part B consists of 15 closed-ended dichotomous questions. Blood pressure was checked for each participant using a sphygmomanometer.^[2] After obtaining permission and

informed consent, participants were gathered in local community halls.

Each participant was

1. Informed about the purpose and importance of the study in their native language (Tamil).
2. Interviewed using the structured questionnaire.
3. Physically examined to monitor blood pressure using a sphygmomanometer and stethoscope.

Each measurement was taken in a seated position after at least five minutes of rest. Two readings were recorded, and the average value was used for the analysis. Participants with blood pressure readings $\geq 140/90$ mm Hg were classified as hypertensive according to standard guidelines. Confidentiality of personal information was maintained throughout the process.

RESULTS AND DISCUSSION

All collected data were entered into Microsoft Excel and analyzed. Descriptive statistics (Frequency, percentage) were used to summarize demographic variables. The Chi-square test was applied to determine associations between hypertension and selected variables such as age, gender, occupation, lifestyle factors, and family history.^[3] The level of statistical significance was set at $p < 0.05$.

Tab. 1: General categorical questionnaire.

Variable	N=320
Gender	People/Percentage
Female	168(53%)
Male	152(47%)
Age	
30-50	148(46%)
51-70	172(54%)
OCCUPATION	
Sedentary	48(15%)
Moderate	173(54%)
Heavy	99(31%)

Tab. 2: Closed ended questionnaire related to Hypertension.

S NO	Variable	N=320
1.	Married	292(92%)
2.	Unmarried	28(8%)
3.	Experienced symptoms like Head ache, Dizziness, Shortness of breath, Palpitation	105(33%)
4.	Already knew the Level of Normal blood pressure	268(84%)
5.	History of Hypertension	82(26%)
6.	Family history of hypertension	54(17%)
7.	Regular physical activity	249(78%)
8.	Under Anti -hypertensive drug therapy	71(22%)
9.	Monitored Blood pressure for past 6 months	95(30%)
10.	Having regular sleep cycle	282(88%)
11.	Experiencing stress in routine life	85(27%)
12.	Habitual smoking	84(26%)
13.	Habitual Alcohol consumption	92(29%)
14.	Salt rich food intake in routine diet	72(23%)
15.	Previous History of Diabetes Mellitus	68(21%)
16.	Previous History of Chronic Heart Disease	10(3%)
17.	Awareness about Hypertension leads to Heart diseases	245(75%)

Tab. 3: Statistical significance derivation of Closed ended Questionnaire.

Characteristics	30-50=148 (Years)	51-70=172 Years	p- value(0.1)
Gender			
Female	89(60%)	90(28%)	
Male	71(50%)	82(26%)	
OCCUPATION			
Heavy	58(58%)	41(42%)	0.08
Moderate	66(38%)	62(36%)	0.1
Sedentary	13(27%)	9(18%)	0.4
Experience symptoms like headache, dizziness, shortness of breath, palpitation	32(22%)	73(43%)	0.006
Already known the Level of Normal blood pressure	141(95%)	127(74%)	0.3
History of hypertention	25(17%)	57(33%)	0.004
Family history of hypertention	29(20%)	25(15%)	0.5
Engage in regular physical activity	137(93%)	112(63%)	0.1
Under Anti -hypertensive drug therapy	23(16%)	48(28%)	0.003
Monitored blood pressure for past 6 months	29(21%)	66(38%)	0.001
Having regular sleep cycle	128(86%)	134(78%)	0.001
Experiencing stress in daily life	45(13%)	40(23%)	0.5
Habitual smoking	38(26%)	46(27%)	0.3
Habitual Alcohol consumption	48(32%)	44(26%)	0.6
Salt rich food intake in routine diet	39(26%)	33(19%)	0.4
Previous history of diabetes mellitus	27(18%)	41(24%)	0.08
Previous history of chronic heart disease	3(2%)	7(4%)	0.05
Aware that hypertension leads to heart diseases	127(86%)	113(66%)	0.3

CONCLUSION

Hypertension is prevalent in rural populations. Regular screening, lifestyle changes, and awareness programs are essential. The present cross-sectional study conducted at Periyeripatti village provides valuable insights into the prevalence of hypertension within the community. The analysis revealed that hypertension was significantly associated with a prior history of hypertension, current use of antihypertensive medication, and previous history of chronic heart disease. Importantly, individuals who regularly monitored their blood pressure and those who reported adequate sleep of 7–8 hours per day showed a significant association with hypertension status, highlighting the role of both medical care and lifestyle practices in disease management. These findings suggest the need for regular blood pressure screening, improved treatment adherence, and promotion of adequate sleep & lifestyle modification as important strategies to reduce the burden of hypertension in rural communities. Health education and preventive measures should be strengthened the community level.

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CONFLICT OF INTEREST

The author declares no conflict of interest.

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