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# Prevalence of Hypertension and Compliance to Treatment Among the Geriatric Population in Barpeta Town

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**KEYWORDS**

Hypertension, Geriatric population, Treatment compliance, Co-morbidities, Economic dependence, Barpeta, Assam

**ABSTRACT:**

Background: Hypertension is a leading public health concern among the elderly, contributing significantly to cardiovascular morbidity and mortality. Despite increasing awareness, treatment compliance remains a challenge, particularly in resource-limited settings.

Objectives: To assess the prevalence of hypertension and evaluate treatment compliance among the geriatric population in Barpeta town, Assam. The study also aimed to identify socio-demographic and behavioral factors associated with hypertension and its management.

Methods: A community-based cross-sectional study was conducted over two months (October–December) among 270 individuals aged ≥60 years in nine municipal wards of Barpeta town. Data were collected through a pre-tested semi-structured questionnaire, and blood pressure was measured using a standard protocol. Descriptive statistics and chi-square tests were used to assess associations between variables.

Results: The overall prevalence of hypertension was 48.5%. Among the 131 hypertensive individuals, 92.4% were aware of their condition, but 34.3% were non-compliant with antihypertensive treatment. Significant associations were observed between hypertension and smoking (p=0.0001), alcohol use (p=0.0013), and co-morbidities (p=0.0001). Economic dependence was significantly associated with poor treatment compliance (p=0.0229), while co-morbidities showed no significant influence on compliance.

Conclusion: Although awareness of hypertension was high among the elderly in Barpeta town, treatment compliance remains inadequate, especially among economically dependent individuals. There is a need for targeted public health strategies focusing on financial support, regular monitoring, and lifestyle interventions to improve hypertension management in geriatric populations.

## INTRODUCTION

Hypertension is one of the most prevalent non-communicable diseases worldwide and a major modifiable risk factor for cardiovascular, cerebrovascular, and renal diseases. It significantly contributes to the global burden of morbidity and mortality, especially among the aging population [1]. With increasing life expectancy, the proportion of elderly individuals is growing rapidly, particularly in

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developing countries like India, where healthcare infrastructure for geriatrics remains underdeveloped [2].

In India, the prevalence of hypertension among older adults is rising steadily. Studies have estimated that nearly 60–70% of the elderly population may be affected by elevated blood pressure [3]. Despite this, awareness, treatment, and control rates remain suboptimal due to poor health-seeking behavior, economic dependency, and lack of regular screening programs [4].

Treatment compliance plays a critical role in the effective management of hypertension. However, among the elderly, adherence to antihypertensive medication is often compromised due to various factors such as polypharmacy, cognitive decline, economic constraints, and side effects of medications [5]. Furthermore, co-existing comorbidities like diabetes, cardiovascular disease, or chronic kidney disease may complicate treatment regimens and affect compliance levels [6].

Barpeta town in Assam represents a semi-urban setting where the elderly population is growing and largely dependent on public health facilities. Limited data exist on the prevalence and treatment adherence of hypertension in this demographic. Understanding the epidemiological burden, awareness, and barriers to compliance is essential to formulate targeted geriatric health policies and interventions in such regions.

This study was undertaken to assess the prevalence of hypertension and treatment compliance among the geriatric population in Barpeta town and to identify the associated socio-demographic and behavioral factors affecting their management.

## MATERIALS AND METHODS

**Study Design and Setting:** A community-based cross-sectional study was conducted over a period of two months (October to December) in Barpeta town, Assam. The study was carried out in nine municipal wards within the catchment area of the Urban Health Training Centre (UHTC), affiliated with the Department of Community Medicine, Fakhruddin Ali Ahmed Medical College.

**Study Population:** The target population included individuals aged 60 years and above residing in the selected municipal wards. Participants who were permanent residents of Barpeta town and gave informed consent were included. Individuals who were critically ill or unable to respond to the questionnaire were excluded.

**Sample Size and Sampling Technique:** A total of 270 elderly individuals were enrolled in the study using a purposive sampling technique. The sample size was determined based on feasibility and coverage within the study duration.

**Data Collection Tools and Procedures:** Data were collected using a pre-tested, semi-structured questionnaire administered through face-to-face interviews. The questionnaire included information on:

- Socio-demographic details
- Medical history, including known hypertension
- Lifestyle factors (e.g., tobacco, alcohol, physical activity)
- Treatment adherence and awareness regarding hypertension

**Blood Pressure Measurement:** Blood pressure was measured using a calibrated mercury sphygmomanometer. Participants were seated and allowed to rest for at least 15 minutes before measurement. Three BP readings were taken at 5-minute intervals, and the average of the three readings was used for analysis. Measurements were taken in the right arm using a standard cuff size.

**Operational Definition of Hypertension:** Hypertension was defined as:

- Systolic BP ≥140 mmHg and/or Diastolic BP ≥90 mmHg on two separate occasions with a minimum interval of 5 minutes **OR**
- Self-reported history of taking antihypertensive medication.

**Ethical Considerations:** Verbal informed consent was obtained from all participants before data collection. The Institutional

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Ethics Committee approved the study. Participant confidentiality and data privacy were maintained throughout the study.

**Data Analysis:**
Data were entered into Microsoft Excel and analyzed using descriptive statistics such as frequencies and percentages. Findings were presented using tables and charts to facilitate interpretation.

**RESULTS AND OBSERVATIONS;**

**Table 1: Distribution of geriatric population based on age and sex**

| AGE GROUPS (IN YEARS) | MALE | FEMALE |
|---|---|---|
| 60-65 | 48 | 27 |
| 66-70 | 34 | 32 |
| 71-75 | 43 | 12 |
| 76-80 | 26 | 7 |
| 81-85 | 24 | 13 |
| 86-90 | 3 | 1 |
| TOTAL | 178 | 92 |

**Table 2: Table showing whether the geriatric population has been diagnosed with hypertension (previously diagnosed and diagnosed during the study)**

| HYPERTENSION DIAGNOSED | Male | Female | Total |
|---|---|---|---|
| Yes | 67 | 64 | 131 |
| No | 111 | 28 | 139 |
| Total | 178 | 92 | 270 |

**Table 3: Distribution of the number of individuals who are aware that they are hypertensive based on sex**

| AWARENESS OF THEIR HYPERTENSIVE STATUS | MALE | FEMALE | Total |
|---|---|---|---|
| Aware | 61 | 60 | 121 |
| Not aware | 6 | 4 | 10 |
| Total | 67 | 64 | 131 |

**Table 4: Table showing the association between smoking, alcohol, and comorbidities with hypertension**

| Factor | Hypertension present | Hypertension absent | P value |
|---|---|---|---|
| Smoker | 33 | 11 | 0.0001 |
| Non smoker | 98 | 128 | |
| Alcoholic | 21 | 6 | 0.0013 |
| Non alcoholic | 110 | 133 | |
| Co-morbidities present | 51 | 11 | 0.0001 |
| Co-morbidities absent | 80 | 128 | |

**Table 5: showing the association between co-morbidities and economic dependence with compliance to hypertension treatment**

| Factor | Hypertension treatment compliance | Hypertension treatment non-compliant | P value |
|---|---|---|---|
| Co- | 42 | 20 | |

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| | | | |
|---|---|---|---|
| morbidities present | | | 0.1743 |
| Co-morbidities absent | 54 | 15 | |
| Economically dependent | 56 | 28 | 0.0229 |
| Economically independent | 40 | 7 | |

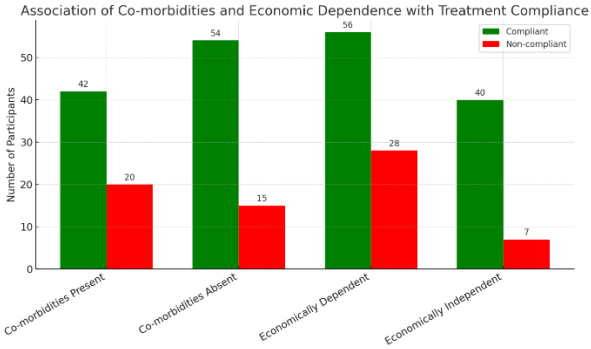


**Figure 1 showing the association between co-morbidities, economic dependence, and treatment compliance**

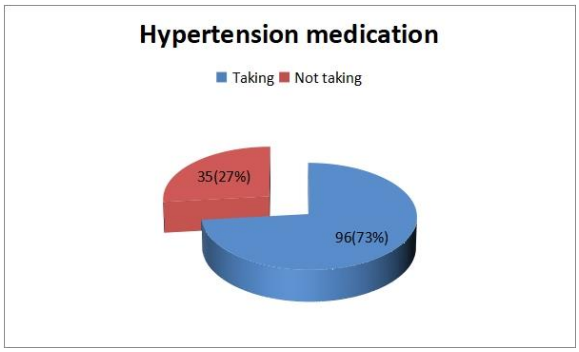


**Fig 2: Pie chart showing whether the geriatric population with hypertension is taking medication for hypertension (n=131)**

## DISCUSSION

In the present study, the prevalence of hypertension among the geriatric population in Barpeta town was found to be 48.5% (131 out of 270 participants). This aligns with national trends, where studies have reported hypertension prevalence ranging from 40% to 60% among the elderly [3, 7]. A higher prevalence was noted among males compared to females, which may be attributed to lifestyle factors such as smoking and alcohol consumption that are more common in elderly males in the Indian context [8].

The awareness level among hypertensive individuals was encouraging, with 92.4% (121 out of 131) being aware of their condition. This is higher than findings from other parts of India, where awareness rates among the elderly ranged from 50% to 70% [9, 10]. The relatively high awareness in this study may be due to better access to healthcare services through the Urban Health Training Centre and prior community outreach activities.

However, despite good awareness, treatment compliance was found to be suboptimal. Around 34.3% (45 out of 131) of known hypertensive individuals were non-compliant with their prescribed antihypertensive regimen. Similar trends have been documented in earlier studies where elderly individuals often discontinue medication due to side effects, financial burden, forgetfulness, or lack of family support [11].

Importantly, a statistically significant association was found between economic dependence and non-compliance to treatment ($p = 0.0229$). This finding supports previous literature that economic insecurity among the elderly, particularly those dependent on family or pensions, is a major barrier to accessing and continuing treatment [12].

While co-morbidities were significantly associated with the presence of hypertension ($p = 0.0001$), they were not significantly associated with treatment compliance ($p = 0.1743$). This suggests that while co-existing diseases may increase the risk of hypertension, they may not necessarily influence medication adherence. This observation is consistent with findings from a study in rural Tamil Nadu, which reported that multimorbidity did not correlate strongly with treatment adherence when social support systems were in place [13].

Behavioral risk factors such as smoking and alcohol consumption were also significantly associated with hypertension in this study. Among smokers, 75% were

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hypertensive, while 77.7% of alcohol users were hypertensive, both with statistically significant associations ($p < 0.05$). These findings underscore the need for integrated lifestyle intervention programs targeting elderly males in particular [14].

Overall, the study emphasizes that although awareness is relatively high, gaps in treatment adherence persist, particularly among the economically dependent elderly. Public health strategies focusing on financial support for medications, free drug distribution, regular follow-up, and caregiver education can help improve compliance in this vulnerable group.

## CONCLUSION

This study highlights a high prevalence of hypertension (48.5%) among the geriatric population in Barpeta town, with a substantial proportion of individuals being aware of their condition. However, nearly one-third of hypertensive individuals were non-compliant with treatment, primarily due to economic dependence. Significant associations were also observed between hypertension and risk factors such as smoking, alcohol use, and co-morbidities. These findings emphasize the urgent need for targeted community-based interventions, including regular screening, financial support for medication, lifestyle modification counseling, and enhanced geriatric health services to improve hypertension management and treatment adherence among the elderly.

## REFERENCES

1. World Health Organization. *Global Status Report on Noncommunicable Diseases 2014*. Geneva: WHO; 2014.
2. United Nations. *World Population Ageing 2019*. Department of Economic and Social Affairs, Population Division.
3. Gupta R, Xavier D. Hypertension: The most important non communicable disease risk factor in India. *Indian Heart J.* 2018;70(4):565–572.
4. Anchala R, Kannuri NK, Pant H, et al. Hypertension in India: A systematic review and meta-analysis of prevalence, awareness, and control of hypertension. *J Hypertens.* 2014;32(6):1170–1177.
5. Reddy P, Prabhu GR. Prevalence and risk factors of hypertension in the elderly population of a rural South Indian community. *Indian J Public Health.* 2005;49(2):63–65.
6. Jin J, Sklar GE, Min Sen Oh V, Li SC. Factors affecting therapeutic compliance: A review from the patient's perspective. *Ther Clin Risk Manag.* 2008;4(1):269–286.
7. Chobanian AV, Bakris GL, Black HR, et al. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension.* 2003;42(6):1206–1252.
8. Singh AK, Singh PK, Singh RK, et al. Prevalence and risk factors of hypertension in the geriatric population in India. *J Gerontol Geriatr Res.* 2014;3(6):1–5.
9. Yadav S, Boddula R, Genitta G, et al. Prevalence & risk factors of pre-hypertension & hypertension in an affluent north Indian population. *Indian J Med Res.* 2008;128(6):712–720.
10. Malhotra R, Chan A, Malhotra C, Østbye T. Prevalence, awareness, treatment and control of hypertension in the elderly population of Singapore. *J Hum Hypertens.* 2010;24(4):229–237.
11. Rathore V, Khapre M, Saoji A, Gupta S. Study on treatment compliance among hypertensive patients in a tertiary care hospital in central India. *Int J Community Med Public Health.* 2018;5(5):2150–2154.
12. Bhandari B, Mandal PK. Economic dependency and health status of elderly in India: Evidence from National Sample Survey. *Aging Int.* 2016;41(2):193–210.
13. Bhojani U, Mishra A, Neethi G, et al. Multimorbidity and health care utilization among elderly in rural Tamil Nadu. *BMC Public Health.* 2020;20:1349.
14. Mohan V, Seedat YK, Pradeepa R. The rising burden of diabetes and hypertension in southeast Asian and African regions: Need for effective strategies for prevention and control in primary health care settings. *Int J Hypertens.* 2013;2013:409083.