



**IMPACT OF COMMUNITY- BASED HEALTH EDUCATION ON HYPERTENSION
MANAGEMENT AMONG ADULT AT PHC RAIPUR, DEHRADUN**

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ABSTRACT

Hypertension is a major non-communicable disease and a leading contributor to global morbidity and mortality. In India, it affects a substantial proportion of the adult population, particularly individuals aged 30–60 years who represent the economically productive segment of society. Despite the availability of effective pharmacological therapies, hypertension control remains suboptimal due to poor awareness, unhealthy lifestyle practices, delayed diagnosis, and low adherence to treatment. These challenges are more pronounced in semi-urban and rural regions, where limited health literacy and inadequate access to continuous health education further aggravate disease burden. The present study aimed to evaluate the impact of community-based health education on hypertension management among adults attending Primary Health Centre (PHC) Selaqui, Dehradun. A community-based interventional study design was adopted and conducted over a period of 45 days. Hypertensive individuals aged 30–60 years residing within the PHC catchment area were included. The intervention consisted of structured health education sessions focusing on key aspects such as dietary modification, particularly salt restriction, promotion of regular physical activity, stress management techniques, and reinforcement of medication adherence. Educational strategies included group sessions, individual counseling, and distribution of information, education, and communication (IEC) materials. Baseline and post-intervention assessments were carried out to evaluate changes in knowledge, attitude, practices, and blood pressure levels. The findings demonstrated a significant improvement in participants' awareness and understanding of hypertension and its associated risk factors. Positive behavioral changes were observed, including adoption of healthier dietary habits, increased physical activity, and improved compliance with prescribed medications. Furthermore, a measurable reduction in both systolic and diastolic blood pressure levels was recorded following the intervention, indicating improved disease control. In conclusion, community-based health education is an effective, feasible, and cost-efficient strategy for improving hypertension management at the primary healthcare level. By enhancing patient awareness and promoting sustainable lifestyle modifications, such interventions can bridge the gap between diagnosis and long-term disease control. Strengthening community engagement and integrating structured education programs into PHC services can play a vital role in reducing the burden of hypertension and its complications in India.

KEYWORDS: Hypertension, Community-based intervention, PHC, Blood pressure, Lifestyle modification, Adherence.

INTRODUCTION

Hypertension is one of the most significant public health challenges worldwide and a leading cause of cardiovascular morbidity and mortality, affecting approximately 1.28 billion adults globally.^[1] It is a major risk factor for serious conditions such as stroke,

myocardial infarction, heart failure, and chronic kidney disease.^[2] The increasing prevalence of hypertension is particularly concerning in developing countries, where rapid urbanization, changing dietary patterns, reduced physical activity, and rising stress levels contribute to its growing burden. In India, hypertension affects a

substantial proportion of the adult population, with nearly one-third of adults being affected, especially those in the age group of 30–60 years.^[3]

Despite the availability of effective pharmacological treatments, hypertension control remains inadequate. This is largely due to poor awareness, delayed diagnosis, lack of regular monitoring, and inadequate adherence to prescribed therapy.^[4] In semi-urban regions such as Selaqui in Dehradun, these challenges are further exacerbated by occupational stress, sedentary lifestyles, and unhealthy dietary habits. Many individuals continue to perceive hypertension as a symptomatic condition, leading to irregular treatment and poor long-term disease control.

Primary Health Centres (PHCs) serve as the cornerstone of healthcare delivery in rural and semi-urban areas and play a vital role in early detection and management of hypertension. However, gaps in patient education, counseling, and follow-up remain a major barrier to effective control. Community-based health education has been increasingly recognized as an effective approach to address these gaps by improving awareness, promoting healthy lifestyle practices, and enhancing adherence to treatment.^[5]

Therefore, the present study was undertaken to evaluate the effectiveness of structured community-based health education in improving hypertension management among adults attending a Primary Health Centre.

OBJECTIVES

Primary Objective

- To evaluate the impact of community-based health education on blood pressure control.

Secondary Objectives

- To assess changes in knowledge, attitude, and practices (KAP)
- To evaluate lifestyle modifications and treatment adherence
- To analyze community participation in disease management

MATERIALS AND METHODS

Study Design

Community-based interventional study with pre- and post-assessment.

Study Population

Adults aged 30–60 years diagnosed with hypertension residing in PHC Selaqui catchment area.

Study Duration

45 days (November–December 2025)

Inclusion Criteria

- Age 30–60 years
- Diagnosed hypertension

- Resident of PHC area
- Willing to participate

Exclusion Criteria

- Severe comorbidities
- Pregnancy
- Recent hypertensive emergency
- Non-consent

Intervention

- Health education sessions
- Salt restriction (<5 g/day)
- Physical activity (≥150 min/week)
- Stress management
- Medication adherence counseling

Data Collection

- Blood pressure measurement
- BMI
- KAP questionnaire
- Lifestyle assessment

DATA ANALYSIS

Statistical analysis included paired comparison tests to evaluate pre- and post-intervention outcomes.

RESULTS

Table 1: Age Distribution of Participants.

| Age Group (years) | Percentage (%) |
|-------------------|----------------|
| 30–40 | 35% |
| 41–50 | 40% |
| 51–60 | 25% |

Interpretation: Majority belonged to 41–50 years age group, indicating higher vulnerability.^[6]

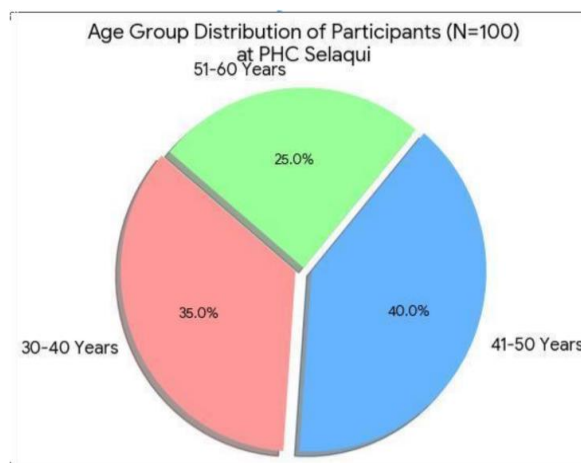


Table 2: Knowledge Levels Before and After Intervention.

| Knowledge Level | Pre (%) | Post (%) |
|-----------------|---------|----------|
| Adequate | 20% | 60% |
| Moderate | 50% | 30% |
| Inadequate | 30% | 10% |

Interpretation: Significant improvement in knowledge levels after intervention.^[7]

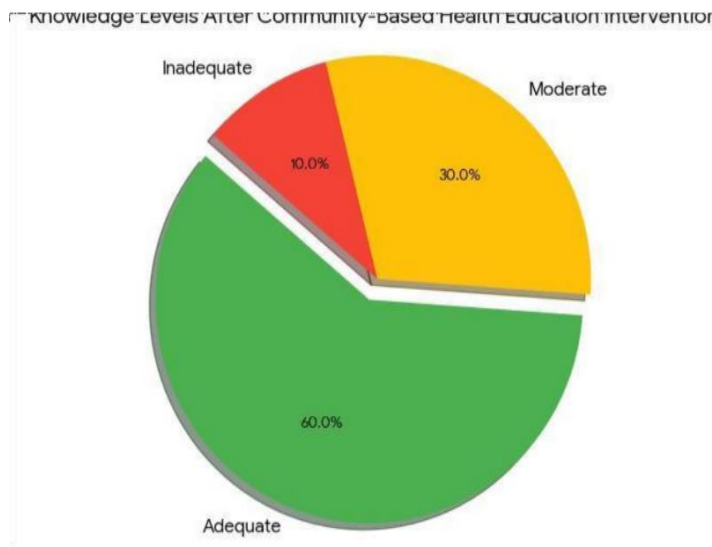


Table 3: Behavioral Changes.

| Parameter | Pre (%) | Post (%) |
|----------------------|---------|----------|
| Low salt intake | 25% | 65% |
| Regular exercise | 20% | 55% |
| Medication adherence | 40% | 75% |

Table 4: Blood Pressure Reduction.

| Parameter | Pre-intervention | Post-intervention | Mean Reduction |
|------------|------------------|-------------------|----------------|
| SBP (mmHg) | 148 ± 10 | 136 ± 8 | ↓12 mmHg |
| DBP (mmHg) | 94 ± 6 | 86 ± 5 | ↓8 mmHg |

Interpretation: Statistically significant reduction in BP observed.^[8]

Key Findings

- Improved awareness and knowledge
- Behavioral modification achieved
- Increased treatment adherence
- Reduction in systolic and diastolic BP

Another important observation of the present study is the influence of socio-environmental factors on hypertension prevalence and control. In semi-urban regions such as Selaqui, factors including occupational stress, sedentary lifestyle, and unhealthy dietary practices play a significant role in the development and persistence of hypertension. These determinants not only increase disease burden but also hinder effective management. Similar patterns have been reported in developing countries, where rapid urbanization and lifestyle transitions necessitate culturally appropriate and context-specific intervention strategies.^[9]

Despite the encouraging outcomes, certain limitations of the study should be acknowledged. The relatively short duration of follow-up restricts the assessment of long-term sustainability of behavioral changes and blood pressure control. Additionally, the modest sample size

limits the generalizability of the findings to broader populations. Nevertheless, the results are consistent with prevailing epidemiological trends in India, where hypertension continues to pose a major public health challenge due to gaps in awareness, treatment, and control.^[10]

DISCUSSION

The present study demonstrates that community-based health education significantly improves hypertension management among adults attending PHC Selaqui. The observed reduction in systolic and diastolic blood pressure, along with improvements in knowledge, lifestyle practices, and treatment adherence, highlights the effectiveness of structured educational interventions delivered at the community level.

Hypertension control remains suboptimal in many parts of India despite the availability of effective pharmacological therapies. This is largely due to poor awareness, unhealthy lifestyle practices, and inadequate adherence to prescribed treatment. The findings of this study reinforce the importance of non-pharmacological strategies, particularly health education, in bridging the gap between diagnosis and effective disease control. A key strength of this study is the use of a community-based approach. Delivering education within the

community helps reduce barriers such as limited access to healthcare facilities, financial constraints, and lack of continuous follow-up. It also minimizes the psychological distance between patients and healthcare providers, encouraging greater engagement and participation in disease management.

The involvement of ASHA workers and community volunteers played a critical role in the success of the intervention. Their regular interaction with participants, personalized counseling, and follow-up support contributed to improved adherence and sustained behavioral change. This highlights the importance of human interaction and trust in achieving long-term health outcomes.

A significant improvement in knowledge levels was observed among participants after the intervention. This suggests that lack of awareness is a major barrier to hypertension control. Importantly, there was a noticeable shift in perception, with participants beginning to recognize hypertension as a chronic condition requiring continuous management rather than a condition requiring treatment only when symptoms appear.

Behavioral modifications such as reduced salt intake, increased physical activity, and improved medication adherence were key contributors to the observed reduction in blood pressure. Although changes in lifestyle habits may take time to fully establish, even moderate improvements were sufficient to produce clinically meaningful outcomes in this study.

Socio-environmental factors also played an important role in influencing hypertension management. In semi-urban settings like Selaqui, occupational stress, sedentary lifestyles, and dietary patterns contribute significantly to disease prevalence. Community-based interventions tailored to these local contexts are therefore essential for effective disease control.

Despite the positive outcomes, certain limitations must be acknowledged. The short duration of the study limits the ability to assess long-term sustainability of behavioral changes and blood pressure control. Additionally, the relatively small sample size may restrict the generalizability of the findings to broader populations. Overall, the study highlights that community-based health education is not merely an adjunct to medical treatment but a central component of effective hypertension management. Integrating structured education programs into primary healthcare systems, along with active community participation, can significantly reduce the burden of hypertension and its associated complications.

CONCLUSION

Community-based health education emerges as a highly effective and economical strategy for the management of hypertension at the primary healthcare level. The present

study demonstrates that delivering structured educational interventions within the community significantly enhances patients' understanding of hypertension, its risk factors, and the importance of long-term management. Improved awareness translates into positive behavioral changes, including adoption of healthier dietary practices, increased physical activity, stress management, and better adherence to prescribed medications. Furthermore, the intervention successfully bridged the gap between clinical diagnosis and home-based disease management, empowering individuals to take an active role in controlling their blood pressure. The involvement of community health workers, particularly ASHA workers, played a crucial role in reinforcing education, ensuring follow-up, and sustaining motivation among participants. This human-centered approach proved more effective than passive information dissemination methods. The observed reduction in blood pressure levels highlights the clinical significance of integrating lifestyle education with routine medical care. Community-based interventions not only address the medical aspects of hypertension but also target the underlying behavioral and socio-environmental determinants. In conclusion, incorporating structured community-based health education into primary healthcare services can substantially improve hypertension outcomes. Scaling up such interventions through strengthened PHC systems and community engagement can contribute to reducing the overall burden of hypertension and its complications in India.

Recommendations

- Integrate structured education programs at PHC level
- Strengthen role of ASHA workers
- Conduct long-term follow-up studies
- Promote community participation

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