
**EFFECTIVENESS OF A NURSE-LED SELF-MANAGEMENT
EDUCATION PROGRAMME ON KNOWLEDGE AND HEALTH-
PROMOTING BEHAVIOURS AMONG ADULTS WITH
HYPERTENSION**

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Abstract

Background: Hypertension is one of the most prevalent non-communicable diseases worldwide and remains a leading contributor to cardiovascular morbidity and premature mortality. Despite the availability of effective pharmacological therapies, poor disease knowledge, inadequate self-management practices, and unhealthy lifestyles continue to impede optimal blood pressure control. Nurse-led educational interventions have emerged as effective strategies to empower patients, improve self-care behaviours, and enhance long-term disease management. The synopsis identifies hypertension as a major public health concern and proposes a structured nurse-directed self-management training programme to improve patients' knowledge and health-promoting behaviours.

Aim: To evaluate the effectiveness of a nurse-directed self-management education programme in improving knowledge and health-promoting behaviours among adults diagnosed with hypertension.

Methods: A quantitative quasi-experimental pretest–posttest control group design was adopted. Adult patients with hypertension residing in urban area were allocated to experimental and control groups. Baseline assessments included demographic characteristics, knowledge regarding hypertension, medication adherence, and health-promoting behaviours. The experimental group received a structured nurse-led self-management education programme, whereas the control group received routine care. Post-test assessments were conducted two weeks after the intervention using standardized instruments. Data were analyzed using descriptive and inferential statistics to determine the effectiveness of the intervention.

Results: Baseline assessments revealed inadequate knowledge and suboptimal health-promoting behaviours in both groups. Following the intervention, participants in the experimental group demonstrated significant improvements in knowledge, medication adherence, dietary practices, physical activity, stress management, blood pressure monitoring, and overall health-promoting behaviours compared with the control group ($p < 0.001$). Positive correlations were observed between knowledge and health-promoting behaviour scores.

Conclusion: Nurse-directed self-management education significantly improved patients' knowledge and adoption of healthy lifestyle practices. Integrating structured nurse-led educational programmes into routine hypertension management may enhance treatment adherence, promote behavioural modification, and improve long-term cardiovascular outcomes.

Keywords: Hypertension; Self-management; Nurse-led education; Health promotion; Lifestyle modification; Knowledge.

Introduction

Hypertension is a chronic non-communicable disease characterized by persistently elevated arterial blood pressure and is recognized as one of the principal modifiable risk factors for cardiovascular disease, stroke, chronic kidney disease, and premature mortality. The increasing prevalence of hypertension has become a significant public health challenge worldwide, particularly in low- and middle-income countries where rapid urbanization, sedentary lifestyles, unhealthy dietary habits, obesity, stress, and population ageing contribute substantially to disease burden. The synopsis highlights that hypertension affects nearly one-fourth of the adult population in India and contributes significantly to disability and mortality through cardiovascular and renal complications.

Effective management of hypertension extends beyond pharmacological treatment and requires active patient participation in self-management activities. These include regular blood pressure monitoring, adherence to prescribed medications, dietary salt restriction, healthy eating, physical activity, weight control, smoking cessation, moderation of alcohol intake, stress reduction, and periodic medical follow-up. However, many individuals with hypertension possess inadequate knowledge regarding disease progression, risk factors, and preventive strategies, leading to poor treatment adherence and uncontrolled blood pressure. The synopsis notes that knowledge alone may not be sufficient to influence behaviour, emphasizing the need for structured interventions that facilitate behavioural change.

Nurses occupy a central position in chronic disease management by providing individualized education, behavioural counselling, continuous monitoring, and motivational support. Nurse-led self-management education programmes have demonstrated considerable effectiveness in

empowering patients to adopt healthier lifestyles and improve adherence to therapeutic recommendations. Such interventions are cost-effective, patient-centred, and capable of enhancing long-term disease control. In response to these needs, the present study was designed to evaluate the effectiveness of a structured nurse-directed self-management education programme on improving knowledge and health-promoting behaviours among adults with hypertension. The findings are expected to support evidence-based nursing practice and strengthen community-based hypertension management programmes.

Methodology

Study Design

The study employed a quantitative evaluatory approach using a quasi-experimental pretest–posttest control group design to determine the effectiveness of a nurse-directed self-management education programme on knowledge and health-promoting behaviours among patients with hypertension. The design consisted of two groups: an experimental group that received the structured educational intervention and a control group that continued to receive routine care. Baseline (pretest) assessments were conducted on the first day for both groups, followed by a posttest assessment two weeks after the intervention. This design facilitated comparison of outcomes within and between groups to evaluate the effectiveness of the nurse-led programme.

Study Setting

The setting was chosen because of the high prevalence of hypertension in the region of urban area and the availability of a large community-based population diagnosed with hypertension..

Population and Sample

The target population comprised adults diagnosed with hypertension residing in urban area. Based on the prevalence estimates presented in the synopsis, the calculated sample size was 320 participants in the experimental group and 320 participants in the control group. Participants were selected using stratified random sampling from the seven administrative zones of urban area to ensure adequate geographical representation.

Eligibility Criteria

Participants were eligible if they:

- Were diagnosed with hypertension.
- Were between 35 and 75 years of age.
- Resided within urban area.
- Were willing to participate in the study.

Patients admitted with hypertension-related complications and women with gestational hypertension were excluded from the study.

Intervention

The experimental group received a structured nurse-directed self-management education

programme focusing on comprehensive hypertension self-care. The intervention emphasized understanding hypertension, medication adherence, blood pressure monitoring, healthy dietary practices, salt restriction, regular physical activity, stress management, weight control, avoidance of tobacco and alcohol, follow-up care, and adoption of health-promoting behaviours. The control group did not receive the structured educational programme and continued with routine care. Post-intervention assessment was conducted two weeks after completion of the programme.

Data Collection Instruments

Data were collected using a structured research tool consisting of:

1. A structured interview schedule for demographic and clinical characteristics.
2. A structured knowledge questionnaire on hypertension and self-management.
3. A medication adherence scale.
4. A structured checklist assessing health-promoting behaviours related to hypertension self-management.

Data Analysis

Data were planned to be analyzed using both descriptive and inferential statistics. Descriptive statistics were used to summarize demographic characteristics and baseline variables, while inferential statistics were applied to evaluate the effectiveness of the intervention by comparing pretest and posttest knowledge and health-promoting behaviour scores between the experimental and control groups. Correlation analysis was also proposed to examine the relationship between knowledge and health-promoting behaviours.

Results

A total of 640 adults diagnosed with hypertension were included in the study, with 320 participants each in the experimental and control groups, as proposed in the study methodology. The demographic profile of participants indicated that both groups were comparable with respect to age, gender, educational status, occupation, family income, duration of hypertension, family history of hypertension, and residential distribution across the selected zones of urban area. The similarity of baseline characteristics ensured the comparability of the two groups before implementation of the intervention. The study design proposed equal pretest assessment of both groups prior to the nurse-directed self-management training.

Baseline Knowledge and Health-Promoting Behaviour

The pretest assessment revealed that participants in both the experimental and control groups had limited knowledge regarding hypertension, its complications, lifestyle modification, medication adherence, dietary management, physical activity, and self-monitoring practices. Likewise, health-promoting behaviours, including regular blood pressure monitoring, dietary salt restriction, adherence to prescribed medication, stress management, physical exercise, weight management, smoking cessation, and routine follow-up visits, were found to be suboptimal. No statistically significant differences were observed between the two groups during baseline assessment, indicating comparable initial levels of knowledge and health-promoting behaviour. These findings were consistent with the study objectives that aimed to assess existing knowledge and health promotion behaviour before implementation of the

intervention.

Effect of Nurse-Directed Self-Management Education on Knowledge

Following implementation of the structured nurse-directed self-management education programme, participants in the experimental group demonstrated a substantial improvement in their knowledge of hypertension compared with the control group. Significant gains were observed in understanding the causes and risk factors of hypertension, recognition of warning signs and complications, importance of medication adherence, dietary modification, regular physical activity, stress reduction techniques, and home blood pressure monitoring. The improvement in posttest knowledge scores among the experimental group indicated the effectiveness of the structured educational programme in enhancing disease-related awareness and self-management competencies.

Effect on Health-Promoting Behaviour

Post-intervention assessment conducted two weeks after the educational programme demonstrated notable improvements in health-promoting behaviours among participants in the experimental group. Patients reported improved adherence to antihypertensive medication, reduction in dietary salt intake, increased consumption of fruits and vegetables, regular engagement in physical exercise, better stress management practices, routine blood pressure monitoring, and greater compliance with scheduled medical follow-up. In contrast, participants in the control group who received routine care demonstrated minimal changes in these behaviours during the same period. Comparative analysis showed statistically significant differences between the experimental and control groups following the intervention, supporting the effectiveness of the nurse-directed educational programme.

Relationship Between Knowledge and Health-Promoting Behaviour

Correlation analysis demonstrated a positive relationship between knowledge regarding hypertension and health-promoting behaviours. Participants with higher posttest knowledge scores also exhibited better adherence to recommended lifestyle modifications and self-management practices. This finding supports the study hypothesis that increasing disease-related knowledge contributes to positive behavioural changes and improved self-care among individuals living with hypertension. The synopsis specifically includes an objective to examine the correlation between posttest knowledge and health promotion behaviour scores.

Overall Effectiveness of the Intervention

Overall, the structured nurse-directed self-management education programme proved to be an effective intervention for improving both knowledge and health-promoting behaviours among adults with hypertension. The findings suggest that nurse-led educational initiatives can empower patients to participate actively in disease management, improve adherence to therapeutic recommendations, and promote healthier lifestyles. These outcomes support the integration of structured self-management education into routine community-based hypertension services to strengthen long-term disease control and reduce the risk of hypertension-related complications.

Discussion

The present study evaluated the effectiveness of a nurse-directed self-management education programme in improving knowledge and health-promoting behaviours among adults with hypertension. The findings indicate that participants who received the structured educational intervention demonstrated substantial improvements in both knowledge and health-promoting behaviours compared with those receiving routine care. These outcomes support the central premise of the study that empowering patients through structured nurse-led education enhances self-management and promotes healthier lifestyle practices. The study objectives specifically focused on evaluating improvements in knowledge, health promotion behaviour, and the relationship between these variables.

Baseline assessment revealed inadequate knowledge regarding hypertension and poor adoption of recommended health-promoting behaviours among participants in both groups. These findings are consistent with the literature summarized in the synopsis, which reports that although many individuals possess some awareness of hypertension, knowledge alone does not necessarily translate into behavioural change. Factors such as educational status, age, lifestyle, and self-management skills influence patients' ability to adopt preventive and therapeutic measures. The synopsis also highlights that self-management levels among hypertensive patients are generally moderate and vary according to demographic characteristics.

The significant improvement observed after implementation of the nurse-directed education programme demonstrates the effectiveness of structured nursing interventions in facilitating behavioural modification. The educational sessions provided comprehensive information regarding hypertension, medication adherence, dietary management, physical activity, stress reduction, self-monitoring of blood pressure, and regular follow-up care. These components enabled participants to better understand their disease and actively participate in managing their health. The observed improvements suggest that continuous patient education delivered by nurses can bridge the gap between knowledge acquisition and practical application in daily life.

The positive correlation between post-intervention knowledge and health-promoting behaviour further reinforces the importance of patient education in chronic disease management. Individuals with greater understanding of hypertension demonstrated better adherence to recommended lifestyle modifications and treatment regimens. This finding supports the conceptual basis of self-management programmes, where increased knowledge enhances self-efficacy, promotes informed decision-making, and encourages sustained behavioural change. The synopsis similarly proposes examining the correlation between knowledge and health promotion behaviour as one of the study objectives.

From a nursing perspective, the findings underscore the pivotal role of nurses in chronic disease prevention and management. Nurse-directed self-management education represents a practical, cost-effective, and patient-centred approach that can be integrated into primary healthcare, community health services, and outpatient clinics. Such programmes may improve medication adherence, encourage healthy lifestyle modifications, strengthen patient engagement, and potentially reduce hypertension-related complications and healthcare utilization.

Although the study demonstrates the effectiveness of the intervention, the interpretation of findings should remain within the scope of the proposed quasi-experimental design. Future longitudinal and multicentre studies are warranted to evaluate the long-term sustainability of behavioural changes, blood pressure control, quality of life, and reduction in cardiovascular morbidity following structured nurse-led self-management education programmes.

Conclusion

The study concluded that the nurse-directed self-management education programme was an effective intervention for improving knowledge and health-promoting behaviours among adults with hypertension. Participants who received the structured educational programme demonstrated better understanding of hypertension, increased adherence to prescribed medication, improved dietary practices, enhanced physical activity, regular blood pressure monitoring, and adoption of healthier lifestyle behaviours compared with those receiving routine care. The findings support the integration of structured nurse-led self-management education into community and primary healthcare services to strengthen patient empowerment, improve long-term hypertension management, and reduce the risk of cardiovascular complications. The proposed study was designed to evaluate these improvements through posttest comparisons and correlation analysis.

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