A Study to Assess the Knowledge Regarding the Risk Factors of Cardiovascular Disease Among Patients with Hypertension at Selected Hospitals in Bangalore with A View to Prepare an Informational Booklet

Ms. Sheeba Daniel[1], Ms. Sangeetha[2]
[1]*Assistant Professor department of Medical & Surgical Nursing, Hosmat College of Nursing, Bangalore, Karnataka, India.*
[2]*Principal, Hosmat College of Nursing, Bangalore, Karnataka, India.*

***Abstract*—cardiovascular diseases (CVDs) are the leading cause of mortality worldwide, and hypertension remains a major modifiable risk factor contributing to increased cardiovascular morbidity and mortality. Adequate knowledge regarding cardiovascular risk factors among hypertensive patients is essential for prevention and early management of complications. The present study aimed to assess the knowledge regarding risk factors of cardiovascular disease among hypertensive patients and to determine its association with selected demographic variables. A quantitative non-experimental descriptive design was adopted, and 100 hypertensive patients were selected using purposive sampling technique from selected hospitals in Bangalore. Data were collected using a structured questionnaire comprising socio-demographic variables and knowledge-related items. Descriptive and inferential statistics were used for analysis. The overall mean knowledge score was 12.68, indicating moderate knowledge among participants. Majority of respondents were aged 40–45 years (39%), 68% were male, and 78% belonged to rural areas. Area-wise knowledge scores showed 51% knowledge on anatomy and physiology of the heart, 52% on hypertension, and 49% on cardiovascular risk factors. No statistically significant association was found between knowledge level and selected demographic variables. The findings highlight the need for structured educational interventions, including informational booklets and nurse-led awareness programs, to enhance knowledge and promote preventive practices among hypertensive patients to reduce cardiovascular complications.**

***Index Terms*—Hypertension, Cardiovascular Disease, Risk Factors, Knowledge, Prevention**.

I. INTRODUCTION

Cardiovascular diseases (CVDs) remain the leading cause of morbidity and mortality worldwide, accounting for an estimated 17.3 million deaths annually. The burden of cardiovascular disease continues to rise, particularly in low- and middle-income countries, including India. Among the various risk factors contributing to CVD, hypertension is considered the most significant and modifiable determinant. Persistent elevation of blood pressure increases the risk of coronary artery disease, stroke, heart failure, and renal complications. Hypertension, often referred to as the "silent killer," frequently remains undiagnosed due to its asymptomatic nature. In India, the prevalence of hypertension is steadily increasing in both urban and rural populations. Studies indicate that nearly one in three adults may have elevated blood pressure, yet awareness, treatment, and control rates remain suboptimal. Poor lifestyle practices such as tobacco use, unhealthy dietary habits, physical inactivity, obesity, excessive alcohol consumption, and stress further aggravate cardiovascular risk. Adequate knowledge regarding cardiovascular risk factors plays a crucial role in prevention and early intervention. Hypertensive patients who are informed about modifiable and non-modifiable risk factors are more likely to adopt healthy lifestyle behaviors and adhere to treatment regimens. However, evidence suggests that many patients lack sufficient understanding of the relationship between hypertension and cardiovascular complications.

Nurses play a pivotal role in patient education, health promotion, and prevention strategies. Structured educational interventions, including informational booklets, counseling sessions, and awareness programs, can significantly enhance patients' knowledge and self-care practices. Therefore, assessing the knowledge level of hypertensive patients regarding cardiovascular risk factors is essential to identify gaps and develop targeted educational strategies.

II. NEED FOR THE STUDY

Hypertension has emerged as a major public health problem globally and is recognized as one of the most important modifiable risk factors for cardiovascular diseases. Despite advances in medical management, the prevalence of hypertension continues to increase, particularly in developing countries like India. The growing burden of cardiovascular morbidity and mortality highlights the urgent need for effective preventive strategies. Many individuals with hypertension remain unaware of the associated cardiovascular risks, and even among those diagnosed, knowledge regarding modifiable risk factors is often inadequate. Cardiovascular diseases are largely preventable through lifestyle modifications such as smoking cessation, dietary regulation, regular physical activity, stress management, weight control, and adherence to prescribed medications. However, the adoption of these preventive measures largely depends on the individual's level of awareness and understanding. Lack of knowledge may lead to poor compliance, uncontrolled blood pressure, and increased risk of complications such as stroke, myocardial infarction, and heart failure.

In India, studies have reported that awareness, treatment, and control rates of hypertension remain low, especially among rural populations. Socioeconomic factors, limited access to health information, and inadequate health education contribute to this gap. Since nurses play a key role in patient education and health promotion, identifying the knowledge level of hypertensive patients is essential to design appropriate educational interventions. Therefore, assessing the knowledge regarding cardiovascular risk factors among hypertensive patients becomes crucial to identify knowledge deficits and to develop structured informational materials aimed at improving awareness and promoting preventive behaviours. This study was undertaken with the intention of assessing knowledge levels and preparing an informational booklet to enhance understanding and reduce the risk of cardiovascular complications.

III. OBJECTIVES OF THE STUDY

- To assess the knowledge regarding risk factors of cardiovascular disease among hypertensive patients in selected hospitals of Bangalore.
- To determine the association between knowledge scores and selected demographic variables among hypertensive patients.
- To develop an informational booklet on cardiovascular risk factors and their prevention for hypertensive patients.

HYPOTHESES

- H1: Hypertensive patients will have a certain level of knowledge regarding the risk factors of cardiovascular disease.
- H2: There will be a significant association between the knowledge level regarding cardiovascular disease risk factors and selected demographic variables among hypertensive patients.

ASSUMPTION

- Hypertensive patients may have varying levels of knowledge regarding the risk factors of cardiovascular disease.
- Knowledge regarding cardiovascular risk factors influences preventive health behaviors and compliance with treatment.
- Providing structured educational material, such as an informational booklet, can improve awareness and understanding among hypertensive patients.
- Participants would respond truthfully and accurately to the structured questionnaire.

DELIMITATION

- The study was conducted only among hypertensive patients (pre-hypertension and Stage I hypertension) admitted to selected hospitals in Bangalore.
- The sample size was limited to 100 participants.

- The study focused only on assessing knowledge regarding risk factors of cardiovascular disease and did not evaluate actual lifestyle practices or clinical outcomes.
- Data were collected using a structured questionnaire, and responses were limited to participants' self-reported information.
- The study was conducted within a specific time frame, and findings may not be generalizable beyond similar settings.

IV. ANALYSIS / INTERPRETATION

This chapter presents the analysis and interpretation of data collected from 100 hypertensive patients. Descriptive statistics were used to analyze the knowledge regarding risk factors of cardiovascular disease.

TABLE 1: AGE DISTRIBUTION

Age Group	Frequency	Percentage
22-27	9	9
28-33	22	22
34-39	30	30
40-45	39	39

Interpretation: Majority (39%) of participants were aged 40–45 years.

Figure 1: Age Distribution of Participants

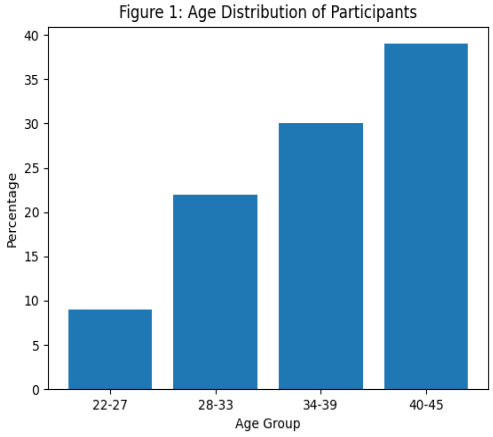

TABLE 2: GENDER DISTRIBUTION

Gender	Frequency	Percentage
Male	68	68
Female	32	32

Interpretation: Majority (68%) were male participants.

Figure 2: Gender Distribution

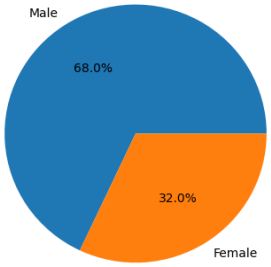

TABLE 3: AREA-WISE KNOWLEDGE SCORE

Area	Mean Percentage	Level
Anatomy & Physiology	51	Moderate
Hypertension	52	Moderate
CVD Risk Factors	49	Moderate

Interpretation: Knowledge level was moderate across all domains. Overall mean knowledge score was 12.68.

V. RESULTS

A total of 100 hypertensive patients participated in the study. The demographic findings revealed that the majority of participants (39%) were in the age group of 40–45 years, followed by 30% in the age group of 34–39 years. With regard to gender distribution, 68% were male and 32% were female. Most of the participants (52%) were married, and a higher proportion (78%) belonged to rural areas. Regarding educational status, 40% had primary education, 30% had secondary education, and 20% were graduates or above. More than half of the participants (52%) reported smoking as a bad habit. The overall mean knowledge score regarding risk factors of cardiovascular disease was 12.68, indicating a moderate level of knowledge among the participants. Area-wise analysis showed that the mean percentage knowledge score was 51% for anatomy and physiology of the heart, 52% for hypertension, and 49% for cardiovascular risk factors..

VI. CONCLUSION

The present study assessed the knowledge regarding risk factors of cardiovascular disease among hypertensive patients in selected hospitals of Bangalore. The findings revealed that the majority of participants possessed a moderate level of knowledge concerning cardiovascular risk factors, hypertension, and anatomy of the heart. Although awareness existed to some extent, it was not adequate to ensure effective prevention and control of cardiovascular complications. No statistically significant association was found between knowledge level and selected demographic variables. Given the high prevalence of hypertension and its strong association with cardiovascular morbidity and mortality, improving patient awareness is essential. Structured educational interventions, including informational booklets and nurse-led health education programs, are recommended to enhance knowledge and encourage adoption of healthy lifestyle practices. Strengthening patient education strategies can play a crucial role in reducing cardiovascular risk and improving long-term health outcomes among hypertensive patients.

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