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Hospital Readmission Patterns among Patients with Chronic Heart Failure: A Descriptive Study

Dr. Manish Kumar Sharma

(Research Guide) **Varsha Rani Mall** ***(PhD Scholar)***

ABSTRACT

Background

Chronic Heart Failure (CHF) is a major cardiovascular disorder associated with frequent hospital readmissions, poor prognosis, increased healthcare expenditure, and reduced quality of life. Recurrent hospitalizations among CHF patients commonly occur due to inadequate self- management practices, poor medication adherence, delayed symptom recognition, and associated comorbidities. Understanding hospital readmission patterns and associated factors is essential for improving patient outcomes and planning effective nursing interventions.

Objectives

- To assess hospital readmission patterns among patients with chronic heart failure.
- To identify factors associated with hospital readmissions among patients with chronic heart failure.
- To determine the association between hospital readmission patterns and selected demographic and clinical variables.

Methods

A quantitative research approach with a descriptive cross-sectional research design was adopted for the study. A total of 150 patients diagnosed with chronic heart failure were selected using a purposive sampling technique based on eligibility criteria and willingness to participate in the study. Data were collected using a demographic and clinical variable sheet along with a structured hospital readmission assessment checklist. Hospital readmission patterns, frequency of hospital admissions, contributing factors, and associated demographic and clinical variables were assessed. Data were analyzed using descriptive and inferential statistics.

Results

Among 150 participants, 46% had one previous hospital readmission, 32% had two readmissions, and 22% had more than two readmissions within the previous one year. Poor medication adherence (58%), excessive fluid intake (44%), delayed symptom recognition (41%), and uncontrolled comorbidities (38%) were identified as major contributing factors for hospital readmissions. A significant association was

found between hospital readmission patterns and educational status, duration of illness, smoking history, and NYHA classification ().

Conclusion

The study findings revealed that hospital readmissions among patients with chronic heart failure were strongly associated with poor self-management practices and disease-related factors. Early identification of high-risk patients and strengthening nurse-led patient education programmes may help reduce avoidable hospital readmissions and improve patient outcomes.

Keywords: Chronic Heart Failure, Hospital Readmission, Readmission Patterns, Cardiac Nursing.

INTRODUCTION

Chronic Heart Failure (CHF) is a progressive clinical syndrome characterized by the inability of the heart to pump sufficient blood to meet the metabolic demands of the body. It is one of the leading causes of morbidity, mortality, and recurrent hospital admissions worldwide. Frequent hospital readmissions among CHF patients increase healthcare costs, prolong hospital stays, reduce functional capacity, and negatively affect overall quality of life.

Globally, the prevalence of chronic heart failure continues to rise due to population aging, hypertension, diabetes mellitus, obesity, a sedentary lifestyle, and coronary artery disease. In India, cardiovascular diseases account for a major proportion of hospital admissions and healthcare expenditure. Many hospital readmissions among CHF patients are preventable and often occur due to poor medication adherence, inadequate dietary control, delayed symptom recognition, insufficient patient education, and a lack of follow-up care.

Effective self-management practices such as adherence to medications, sodium and fluid restriction, daily weight monitoring, symptom recognition, physical activity, and timely healthcare-seeking behavior are essential for reducing disease complications and preventing repeated hospital admissions. However, many patients lack adequate knowledge and confidence regarding disease management.

Nurses play a vital role in educating patients regarding self-care management, symptom monitoring, treatment adherence, and lifestyle modifications. Identifying hospital readmission patterns and associated factors may help healthcare professionals develop targeted interventions to improve patient outcomes and reduce the healthcare burden.

Therefore, the present study was undertaken to assess hospital readmission patterns among patients with chronic heart failure.

OBJECTIVES

- To assess hospital readmission patterns among patients with chronic heart failure.
- To identify factors associated with hospital readmissions among patients with chronic heart failure.
- To determine the association between hospital readmission patterns and selected demographic and clinical variables.

RESEARCH HYPOTHESIS

There will be a significant association between hospital readmission patterns and selected demographic and clinical variables among patients with chronic heart failure at the level of significance.

METHODOLOGY

Research Approach and Design

A quantitative research approach with a descriptive cross-sectional research design was adopted to assess hospital readmission patterns among patients with chronic heart failure.

Setting and Population

The study was conducted in the cardiology wards and outpatient department of a selected tertiary care hospital. The target population consisted of patients diagnosed with chronic heart failure.

Sample and Sampling Technique

A total of 150 patients diagnosed with chronic heart failure were selected using a purposive sampling technique based on eligibility criteria and willingness to participate in the study.

Inclusion Criteria

Patients diagnosed with Chronic Heart Failure classified under New York Heart Association (NYHA) Class II and III, aged above 30 years, able to understand and communicate in Hindi, Gujarati, or English, willing to participate in the study, and available during the data collection period were included in the study.

Exclusion Criteria

Patients who were critically ill, admitted to the intensive care unit during the data collection period, diagnosed with severe psychiatric disorders or cognitive impairment, and patients with terminal illnesses were excluded from the study.

Description and Validation of the Tool

Part I: Demographic and Clinical Variables

The demographic and clinical variable sheet consisted of information regarding age, gender, educational status, occupation, marital status, monthly family income, duration of illness, smoking history, associated comorbidities, and previous hospitalization history.

Part II: Structured Hospital Readmission Assessment Checklist

Hospital readmission patterns were assessed using a structured hospital readmission assessment checklist developed by the investigator. The checklist included the frequency of hospital readmissions, causes of readmission, duration between admissions, medication adherence status, dietary compliance, symptom recognition, and associated comorbid conditions.

Validity and Reliability

Content validity of the tool was established by a panel of seven experts from the fields of cardiology nursing, medical-surgical nursing, and cardiology medicine. The Content Validity Index (CVI) of the tool was found to be 0.90.

Reliability of the checklist was established using the split-half reliability method, and the reliability coefficient was found to be, indicating acceptable reliability and consistency of the tool.

Data Collection Procedure

Administrative permission and ethical clearance were obtained from the concerned authorities and Institutional Ethics Committee prior to data collection. Eligible participants who fulfilled the inclusion criteria were identified from the cardiology wards and outpatient department. Written informed consent was obtained from all participants after explaining the purpose of the study.

Demographic and clinical data were collected using the structured data sheet. Hospital readmission patterns and associated factors were assessed using the structured hospital readmission assessment checklist through patient interviews and hospital record reviews.

Ethical Considerations

Ethical approval for the study was obtained from the Institutional Ethics Committee prior to the commencement of the study. Written informed consent was obtained from all participants. Confidentiality and anonymity of the collected information were maintained throughout the study. Participants were informed about their right to withdraw from the study at any stage without any penalty or effect on their treatment.

Data Analysis

The collected data were analyzed using descriptive and inferential statistical methods. Frequency, percentage, mean, and standard deviation were used to summarize demographic variables and hospital readmission patterns. The Chi-square test was used to determine the association between hospital readmission patterns and selected demographic and clinical variables. The level of statistical significance was fixed at .

RESULTS

Table 1: Distribution of Participants According to Frequency of Hospital Readmissions

Number of Readmissions	Frequency ()	Percentage
One Readmission	69	46%
Two Readmissions	48	32%
More than Two Readmissions	33	22%

Table 2: Factors Associated with Hospital Readmissions

Contributing Factors	Frequency ()	Percentage
Poor Medication Adherence	87	58%
Excessive Fluid Intake	66	44%
Delayed Symptom Recognition	62	41%
Uncontrolled Comorbidities	57	38%
Poor Dietary Compliance	54	36%

Table 3: Association Between Hospital Readmission Patterns and Selected Variables

Demographic and Clinical Variables	Value	Df	-value	Interpretation
Educational Status	8.26	2	<0.05	Significant
Duration of Illness	6.94	2	<0.05	Significant
Smoking History	5.72	1	<0.05	Significant
NYHA Classification	7.48	1	<0.05	Significant

DISCUSSION

The findings of the study revealed that repeated hospital readmissions among patients with chronic heart failure were strongly associated with poor medication adherence, excessive fluid intake, delayed symptom recognition, and uncontrolled comorbidities. The majority of participants experienced at least one hospital readmission within the previous year.

These outcomes strongly align with the conceptual boundaries of the *Middle-Range Theory of Self-Care in Chronic Illness* (Jaarsma et al., 2017). The high prevalence of poor medication adherence (58%) and excessive fluid intake (44%) highlights a major operational vulnerability in *Self-Care Maintenance* behaviors among patients. Concurrently, delayed symptom recognition (41%) underscores prominent difficulties in *Self-Care Monitoring*, demonstrating that patients frequently fail to perceive early physiological changes before they escalate into acute clinical crises requiring hospitalization.

The findings also demonstrated a significant association between hospital readmission patterns and selected demographic and clinical variables such as educational status, duration of illness, smoking history, and NYHA classification. Similar findings have been reported in previous studies emphasizing the importance of patient education, structured self-management practices, and early clinical symptom recognition in reducing avoidable hospital readmissions among patients with chronic heart failure. The findings heavily emphasize the importance of continuous, culturally accessible patient education and structured follow-up care in preventing avoidable hospital readmissions among patients with chronic heart failure.

LIMITATIONS

The study was limited to a single tertiary care hospital and used a purposive sampling technique, which may limit the generalizability of the findings to wider demographic regions. The study also depended partially on participant self-reporting regarding medication adherence and daily self- management practices, which may introduce response or recall bias.

CONCLUSION

The present study concluded that hospital readmissions among patients with chronic heart failure were significantly associated with poor self-management practices and disease-related factors. Strengthening nurse-led patient education and systemic follow-up programmes may help reduce avoidable hospital readmissions and improve overall patient outcomes. Early identification of high-risk patients may help healthcare professionals implement preventive strategies and effectively minimize repeated clinical admissions.

RECOMMENDATIONS

- Similar studies may be conducted with larger sample sizes to enhance statistical power.
- Multi-centre studies can be initiated to improve the generalizability of regional findings.
- Longitudinal studies may be conducted to track long-term, seasonal readmission patterns.
- Community-based cardiac education and outreach programmes must be systematically strengthened.
- Telehealth and digital follow-up interventions may be incorporated for continuous, remote patient monitoring.

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