

"A Study to Assess the Knowledge Regarding Factors Leading to Peripheral Intravenous Catheter (PIVC) Failure among Nursing Interns in Selected Nursing Colleges at Meerut, Uttar Pradesh."

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Abstract

I.INTRODUCTION

Peripheral Intravenous Catheters (PIVC) is one of the most used vascular access devices in the medical field for delivering intravenous fluids, drugs, blood products, and nutritional therapy is a peripheral intravenous catheter (PIVC). PIVCs are widely used, however they can cause problems such phlebitis, infiltration, extravasation, occlusion, infection, and unintentional dislodgement, which can lead to catheter failure. Nursing interns are crucial to the early detection and prevention of these issues. Therefore, in order to guarantee patient safety, enhance the standard of nursing care, and lower healthcare expenses, sufficient understanding of the causes contributing to PIVC failure is crucial.

BACKGROUND OF STUDY

Peripheral intravenous catheters (PIVCs) are the most widely used invasive medical device in health care with an overall failure rate of 35-50%. Most problems are non-infectious, however local site and bloodstream infections can still occur. Even while PIVC-associated infections are infrequent, the overall number of afflicted patients and the preponderance of *Staphylococcus aureus* as related pathogen due to the regular use of these devices are relevant justifications to apply preventive interventions. The purpose of this publication is to create awareness that infections caused by PIVCs are a relevant concern that can be addressed by practice change.

Peripheral intravenous catheters (PIVCs) should be changed no more frequently than every 72 to 96 hours, according to US Centers for Disease Control guidelines. It is believed that routine replacement lowers the incidence of bloodstream infection and phlebitis. Patients find catheter insertion uncomfortable, and if the catheter is still working and there are no indications of inflammation or infection, replacement might not be necessary. Regular replacement may come at a high cost. A review that was first published in 2022 has been updated three times.

In the medical field, peripheral intravascular catheters (PIVCs) are essential vascular access devices that make it easier to administer intravenous treatments. PIVCs have a crucial role, however they are often linked to problems including occlusion, infection, and thrombosis, which lead to catheter failure. One of the most popular procedures for PIVC care is flushing catheters, which ensures patency and lowers the risk of problems by cleaning the internal catheter lumen. However, a lack of agreement in the literature and clinical standards is highlighted by inconsistent flushing practices, including flushing strategies, volume to use, frequency, and approaches.

Peripheral intravenous catheter (PIVC) movement inside the vein, which is linked to vein wall injury, may be a significant factor in PIVC failure. There has never been a measurement of the amount of PIVC movement against the vein wall. The purpose of this study was to investigate PIVC mobility within the vein when the PIVC was subjected to small forces.

STATEMENT OF THE PROBLEM

"A Study to Assess the Knowledge Regarding Factors Leading to Peripheral Intravenous Catheter (PIVC) Failure among Nursing Interns in Selected Nursing Colleges at Meerut, Uttar Pradesh

OBJECTIVES

To assess the level of knowledge regarding factors leading to Peripheral Intravenous Catheter (PIVC) failure among nursing internship students.

To determine the association between knowledge scores regarding factors leading to PIVC failure and selected demographic variables.

HYPOTHESES

H1- There will be a significant association between the knowledge scores of internship nursing students regarding factors leading to Peripheral Intravenous Catheter (PIVC) failure and selected demographic variables.

H0- There will be no significant association between the knowledge scores of internship nursing students regarding factors leading to Peripheral Intravenous Catheter (PIVC) failure and selected demographic variables.

II.METHODOLOGY

The study used a descriptive research design and a quantitative research methodology. Sixty B.Sc. students participated in the study. Using a non-probability purposive sampling method, nursing interns were chosen from nursing schools in Meerut, Uttar Pradesh. A structured knowledge questionnaire with 20 multiple-choice questions about the causes of PIVC failure and demographic information was used to gather data. Descriptive and inferential statistics were used to analyze the gathered data.

III.RESULT

The findings revealed that 35 (58.3%) nursing interns were aged 20–22 years, 42 (70%) were females, 40 (66.7%) belonged to urban areas, and 45 (75%) had received previous training on PIVC insertion. Most participants (32; 53.3%) obtained information through clinical exposure.

Regarding knowledge, 38 (63.3%) nursing interns had good knowledge, 16 (26.7%) had average knowledge, and 6 (10%) had poor knowledge regarding factors leading to PIVC failure. A statistically significant association was found between knowledge scores and area of residence ($\chi^2 = 4.32$) and previous training on PIVC insertion ($\chi^2 = 5.11$) at the 0.05 level of significance. No significant association was found with age, gender, clinical area posting, or source of information.

IV.CONCLUSION

According to the study's findings, most nursing interns had a solid understanding of the causes of peripheral intravenous catheter (PIVC) failure. Nursing interns' prior training and place of residence had a big impact on their level of knowledge. In order to improve patient safety and the standard of nursing care, the results highlight the necessity of frequent educational programs, workshops, simulation-based training, and ongoing professional development