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KNOWLEDGE REGARDING COMPLICATIONS OF INTRAVENOUS CATHETERIZATION AMONG NURSES

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ABSTRACT

A peripheral venous catheter is the most commonly used vascular access in medicine. Application of intravenous catheter cause severe complications and a majority of the staff nurses have lack of awareness regarding these. To assess the knowledge regarding complications of intravenous catheterization among staff nurses in a selected hospital in Ernakulam district, Kerala. A quantitative research approach with descriptive research design was used to determine the knowledge. Structured knowledge questionnaire was used to collect the data. All the subjects were females and majority in the age group of 21-25 years, working in different departments of hospital. Regarding complications of intravenous catheterization only 33 % of subjects had excellent knowledge. Also, there is no significance association between the knowledge level of staff nurses regarding intravenous catheter complications and demographic variables (age, educational status, experience and area of work). In relation to complications of intravenous catheterization, nurses are having average knowledge.

INTRODUCTION

Peripheral intravenous devices (PIV)/catheters are the most commonly used intravenous devices in hospitalized patients. They are primarily used for therapeutic purposes such as administration of medications, fluids and/or blood products as well as for blood sampling. It is the insertion of a flexible tube into the body guided by a stiff pointed rod directly into the blood stream. During a hospital stay it will be in place for more than a day or two [1].

A peripheral catheter is usually considered a low risk; however it can be associated with complications such as hematoma, phlebitis, pain and infections. Many of these complications are never noted as a result of negligence. Sometimes these may lead to life threatening

complications. The insertion and care of peripheral cannulae is a routine task for nurses of all kinds of care [2-4].

The insertion and the methods followed during the procedure usually results in the complications. Nurses have to know the complications of intravenous fluid therapy, the signs and symptoms of complications, and to implement initiatives when a complication occur. That is why; there are guidelines in different hospitals about the recommended duration that a peripheral IV should be in place [5].

The application of intravenous catheter causes severe complications based on information collected by various research studies. A study conducted from October 2001 to March 2003, showed 150 cases with vascular catheter related blood stream infections. The study concluded that blood stream infections remain under estimated and potentially serious complications develop as a result of peripheral vascular cannulization [6].

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Research Article



According to HI Institute of Health Care Improvement (2008), approximately 90% of all central line associated blood stream infection occurs due to lack of central venous catheter care and these infections resulted in higher mortality rates. This showed that the majority of the staff nurses are unaware about complications of intravenous catheterization [7].

OBJECTIVE

- To assess the knowledge of staff nurse regarding complications of intravenous catheterization
- To find out association between knowledge level and complication of intravenous catheterization and selected demographic variables [8].

MATERIAL AND METHODS

A quantitative research approach with descriptive research design was used to explore the knowledge of nurses regarding complications of intravenous catheterization. The samples included staff nurses working in a selected hospital in Ernakulam district, Kerala. Non probability convenient sampling technique was used for the study. A total of 60 staff nurses with BSc Nursing or diploma Nursing, having more than 1 year work experience as staff nurse were enrolled in the study.

DESCRIPTION OF THE TOOL

The tool consisted of the following sections.

Section A: Demographic data consisting of 4 items, which included age, educational status, experience and area of work.

Section B: Knowledge questionnaire comprising 30 items on intravenous catheterization under the following headlines [9].

Data was collected after acquiring permission from the hospital authorities. Consent from staff nurses was obtained prior to data collection. The structured questionnaire was administered only once for data

collection. Data was analyzed using descriptive and inferential statistics [10].

RESULTS

Majority of subjects were females in the age group of 21- 30 years and most of them were GNM. 73.4% of sample had experiences between 1-10 year, 26.6% of sample had experiences below 1 year and none of them had experience above 10 years. Regarding complications of intravenous catheterization, 3.3 % samples had excellent knowledge, 6.6% of sample had good knowledge and 66.8% of sample had average knowledge and 23.3% had poor knowledge. There is no significant association between the knowledge scores with socio demographic variables. Chi-square test was used to associate the level of knowledge and selected demographic variables. The Chi-square value showed that there was no significance association between knowledge and demographic variables (age, educational status, experience and area of work). The calculated chi-square values were less than the table value at the 0.05 level of significance.

The χ^2 calculated value (3.216) is less than χ^2 tabulated value (9.49). Hence $H_{2,1}$ is rejected. There is no significant association between knowledge scores and age.

The χ^2 calculated value (0.412) is less than χ^2 tabulated value (5.99). Hence $H_{2,2}$ is rejected. There is no significant association between knowledge scores and educational status.

The χ^2 calculated value (3.252) is less than χ^2 tabulated value (9.49). Hence $H_{2,3}$ is rejected. There is no significant association between knowledge scores and years of experience.

The χ^2 calculated value (1.831) is less than χ^2 tabulated value (9.49). Hence $H_{2,4}$ is rejected. There is no significant association between knowledge scores and area of work.

Fig 1. Frequency and knowledge distribution of sample based on age.

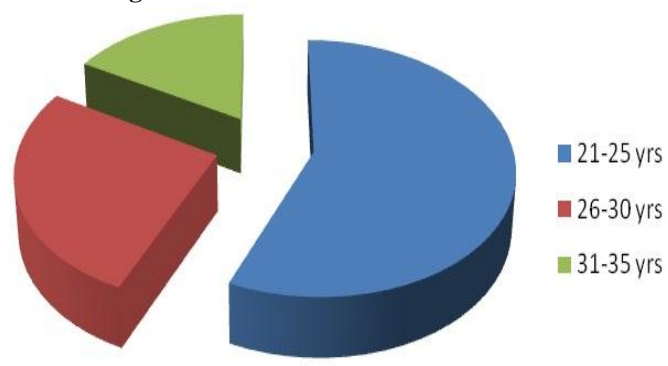
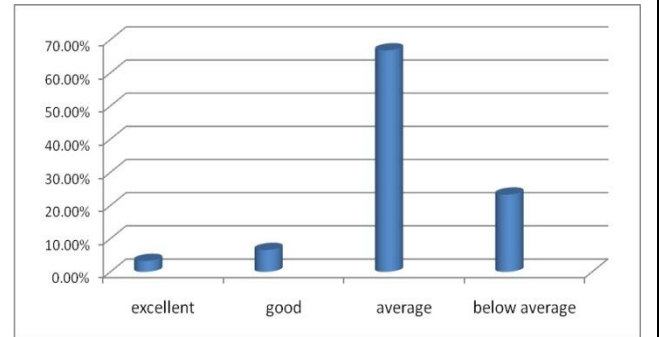


Fig 2. Frequency and percentage distribution regarding knowledge on complications of intravenous catheterization.



| Sl.No | Section of questions | No. of questions | Score |
|--------------|-------------------------------------|------------------|-----------|
| 1 | Indication | 1 | 1 |
| 2 | Complications | 6 | 6 |
| 3 | Signs and symptoms of complications | 11 | 11 |
| 4 | Important consideration | 1 | 1 |
| 5 | Method | 7 | 7 |
| 6 | Treatment for complication | 3 | 3 |
| 7 | Fluid calculation for IV therapy | 1 | 1 |
| TOTAL | | | 30 |

CONCLUSION

This study has shown that the knowledge level of staff nurses regarding complications of intravenous catheterization has no significant association with age, educational status, years of experience and area of work ($P < 0.05$). Several studies have identified that higher levels of education among the nurses have a significant impact on the level of knowledge about intravenous catheter complications. This study has revealed the presence of huge knowledge gap in this regard. The existing knowledge gap in intravenous catheter care will greatly affect the patients. To tackle this scenario, it is essential to target the staff nurses and provide continuing nursing education or in-service training on this matter. Interventions like timely replacement of the catheter appeared to be the most important factor in reducing the occurrence of complications.

RECOMMENDATIONS

Based on the research results, following recommendations are presented:

- Nurses should be provided in-service training at regular intervals regarding complications of IV catheterization and the results should be evaluated.
- In-service training should be provided by expert nurses.
- Nurses should have the habit of following the changes and developments from professional publications.
- Various methods of teaching can be used to create awareness among the staff nurses.

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CONFLICT OF INTEREST:

The author declares that they have no conflict of interest.

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