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A study to assess the knowledge and attitude of complications on long term use of IV cannula among nurses working in SCPM multispecialty hospital at Gonda city U.P

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Abstract
Intravenous therapy is a routine nursing task in any hospital. It has become a major component of patient care. However, the placement of an intravenous cannula can have undesirable effects, the most common of which is phlebitis. Peripheral IV catheterization (PIC) is the most common invasive procedure performed on hospitalized patients. It requires manual dexterity and technical competence, knowledge of pharmaceutical therapy and familiarity with the anatomy and physiology of the vascular system. However, regardless of the generating factor, local complications take the form of bruises, infiltration, leakage, catheter obstruction and phlebitis. Phlebitis is an inflammation of the vein, which may bring with it pain, erythema, ssedema, hardening and/or a palpable thread. Numerous factors can influence the development of phlebitis, such as inadequate technique when inserting the catheter, the patient's clinical situation, the characteristics of the vein, drug incompatibility, tonus and pH of the medicine or solution, ineffective filtration, catheter diameter, size, length and material of manufacture; prolonged use.

Keywords: knowledge, attitude, IV cannula and complication

Introduction
The intravenous route is the fastest way to deliver medications and fluid replacement throughout the body, because the circulation carries them. Intravenous therapy may be used for fluid replacement to correct electrolyte imbalances, to deliver medications, and for blood transfusions [5]. Venous access allows sampling of blood, as well as administration of fluids, medications, parenteral nutrition, chemotherapy, and blood products [6]. Complications may arise in the vein as a result of the cannulation procedure, such are phlebitis, superficial thrombophlebitis, which need to determine treatment [71]. The risk of phlebitis is increased by 4.4 times [27]. In addition, peripheral intravenous (IV) phlebitis has been found to be directly related to the medication or infusate that the patient received via peripheral access, and to the duration of dwell time [28].

Objectives of the study are
1. To assess the mean knowledge and attitude score on complications of IV cannula among nurses working in SCPM multispecialty hospital at Gonda city, U.P.
2. To assess the correlation ship between knowledge score and attitude score on complication of IV cannula among nurses working in SCPM multispecialty hospital at Gonda city, U.P.
3. To associate the knowledge score with their sociodemographic variables.
4. To associate the attitude score with their sociodemographic variables.

Hypothesis
H_1: There will be a significant relationship between knowledge and attitude scores.
H_2: There will be a significant association between knowledge of the nurses with their socio demographic variables.
H_3: There will be a significant association between attitudes of the nurses with their socio demographic variables.

Assumptions
This study assumes that
1. Nurses who are working in SCPM multispecialty hospital are may not have adequate knowledge and attitude towards the development of complications caused by IV cannula.
2. The in-service education may need to develop knowledge and attitude towards complications of IV cannula among nurses working in SCPM multispecialty hospital at Gonda city, U.P.

Operational Definitions
1. **Assess:** In this study it refers to the evaluation of knowledge and attitude on complications of IV cannula among nurses.
2. **Knowledge:** In this study it refers to assessing ideas, the acts and informations, about the complications of IV cannula among nurses.
3. **Attitude:** In this study it refers to a settled way of thinking or feeling about complications of IV cannula among nurses.
4. **Complication:** It refers to the IV cannulation that causes serious problems such as phlebitis, infiltration, hematoma formation and embolism.
5. **IV cannula:** Intravenous (IV) cannulation is a technique in which a cannula is placed inside a vein to provide venous access. Venous access allows sampling of blood, as well as administration of fluids, medications, parenteral nutrition, chemotherapy, and blood products with short and long duration.
6. **Nurses:** In this study a person who have R.N. and R.M. certificates by the apex bodies after trained, to take care for

the sick or infirm and working in SCPM multispecialty hospital at Gonda city, U.P.

Research Approach
The quantitative research approach

Research Design
A descriptive design.

Setting of the Study
SCPM Multispecialty Hospital, Gonda.

Variables
Variables are qualities, properties or characteristics of persons, things or situation that change or vary.

Demographic variables
Demographic variables are age, religion, education, in-service education attended, monthly income, source of knowledge on complication of IV cannula and experience.

Population
Objects that meet certain inclusion criteria in the study. Nurse who works in SCPM Multispecialty Hospital, Gonda**.**
Sample.
50 nurses in SCPM Multispecialty Hospital, Gonda who fulfilled the inclusion criteria for the study**.**

Sampling Technique
The non-probability convenient sampling technique

Inclusion Criteria
1. Working in SCPM multispecialty hospital at Gonda city, U.P.
2. Not participated in same type of study.
3. Willing to participate in this study**.**
4. Sound in physically and mentally at the time of data collection.
5. Available at the time of data collection.

Exclusion criteria
1. Not working in SCPM multispecialty hospital at Gonda city, U.P.
2. Recently participated the same type of study.
3. Not sound in physically and mentally at the time of data collection.
4. Not available at the time of data collection.

Selection and Development of Tool
Based on the research problem and objectives of the study, the following steps were undertaken to select and develop the data collection tool.

a. **Selection of the tool:** A knowledge questionnaire on complication of IV cannula and Attitude scale on complication of IV cannula are selected based on the objectives of the study, as it was considered to be the most appropriate instrument to elicit responses from the participants was selected.

b. **Development of tool:** The instrument selected in a research should be as far as possible the vehicle that would best obtain data for drawing conclusions, which were pertinent to the study.

A structured knowledge questionnaire is developed on complication of IV cannula and the attitude scale is on complication of IV cannula which was prepared to assess the level of knowledge and attitude of nurses on prolong used IV complications.

Description of the Tool
A socio demographic schedule, knowledge and attitude scale was constructed by the investigator which contains items in the following aspects.
Section – I: Socio- demographic data consist of age, religion, education, in-service education attended, monthly income, source of knowledge on complication of IV cannula and experience.
Section – II: knowledge questionnaire consists of 30 items which includes IV sites and anatomy, IV cannulation, complications, management. Each item has four options with write answer one mark and wrong answer 1 mark.
Minimum Score = 0
Maximum Score=30
Knowledge level on complication of long-term use of IV cannula

Table 1

Levels	Percentage	Scores
Good	>75	>23
Average	50 to 75	15 to 23
Poor	<50	<15

Attitude includes 12 items. Each item has three options which are strongly agree, agree, slightly agree, disagree, strongly disagree.
Minimum Score = 0
Maximum Score = 48

Attitude Level on complication of long-term use of IV cannula

Table 2

Levels	Percentage	Scores
Good	>75	>45
Average	50 to 75	30 to 45
Poor	<50	<30

A blueprint of the tool was prepared by the researcher which includes content areas, number of questions, serial number of questions, and weightage in percentage for each content area.

Content validity
Validity refers to whether a measurement instrument accurately measures what it is supposed to measure.
Validity of the tool was established in consultation with guide and experts from the field of medical and surgical nursing. The recommendations and suggestions were considered, and tool was reframed accordingly.

Reliability of the Tool

The split half method was used to test the reliability of the tool. The test was first divided into two equivalent halves and correlation for the half test was found by using Karl Pearson's correlation co-efficient formula and significance of correlation was tested by using probable error (r ½ = 0.80). The reliability co-efficient of the whole tool was then estimated by spearman Brown prophecy formula. The tool was found reliable (r = 0.90).

Data Analysis

The analysis was made by using the important parameters like percentage, mean, SD and chi-square test.

Results

The collected data was tabulated according to various parameters and the complete analysis was done with descriptive and inferential statistics. Maximum 20(40%) nurses had average knowledge, 18(36%) were having poor knowledge and the remaining 12(24%) of them were having good knowledge on complication of long-term use of IV cannula. Maximum 23(46%) nurses had average knowledge, 17(34%) were having poor knowledge and the remaining 10(20%) of them were having good attitude on complication of long-term use of IV cannula.

The mean value of overall knowledge was 15.88 with a standard deviation of 8.395, whereas mean value of attitude was 16.12 with a standard deviation of 7.224. The knowledge and attitude correlation value was "r" = -1 by using Karl Pearson's Product Moment Correlation Coefficient formula. It shows a statistically negative correlation between the nurses' knowledge and the Attitude on the complications of IV cannula. Hence H_1 is rejected. The chi-square implies that there is a significant association between sociodemographic variable such as religion, education, source of knowledge and experience and the knowledge scores at 0.05 level of significant as the calculated chi-squares values are higher than the tabulated value. Therefore, the H_2 hypothesis accepted. The chi-square implies that there is a significant association between sociodemographic variable such as education, in-service education, source of knowledge and experience and the attitude scores at 0.05 level of significant as the calculated chi-squares values are higher than the tabulated value. Therefore, the H_3 hypothesis accepted.

Recommendation

In view of the finding reported the following recommendation are made for further research:

1. The study should be replicated on a large sample from various hospital.
2. The attitude rating scale may be modified to include personality of the nurses and the manifestation related to awareness of illness, intervention pattern, nurse patient relation, as these aspects influence the coping experienced by the subjects.
3. As the attitude of nurses are influenced by various factors and the extent to which they experience the same and undergo change, a follow-up study would be more suitable to elicit the change knowledge and attitude in detail.
4. An evaluative study may be carried out to find the effectiveness of counselling problem to promote better knowledge and attitude of the nurses.
5. Longitudinal study in the area provides better understanding in all aspects of the complications.
6. Rural and Urban based study should be conducted.

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