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A Pre-Experimental Study to Assess the Knowledge Regarding Venous Blood Specimen Collection among Student Nurses

Rupinder Kaur

(MSN) RN, Lecturer @ IONURC, Goindwal Sahib

ABSTRACT

Introduction: Blood analysis is one of the most important tool available to clinicians with in health care. Many people consider having blood test a simple procedure, but don't understand what take place behind it, when the blood is drawn and when the doctor makes a diagnosis[1].

Blood test is a vital part of diagnostic process, helping physician to make the correct diagnosis and determine appropriate course of treatment. So it's very important to have adequate knowledge, and correct practice of specimen collection, as it is the prior step undertaken to make the diagnosis for further treatment[2].

Accuracy of diagnosis is essential for safe patient care. Providing for the safety of the healthcare worker may also hinge upon accurate diagnosis and rapid response. So it is very important to collect, handle and transport the collected specimen correctly and thus it depends upon the knowledge regarding blood specimen collection accurately[3].

Method: Quantitative research approach was adopted to assess the knowledge regarding venous blood specimen collection among student nurses studying in B.Sc. Nursing 2nd yr at Army College Of Nursing Jalandhar Cantt

Sample size: 40.

Sampling technique: Convenient sampling technique was used to collect the sample.

Results: Total 40 samples were taken for the study, out of which 15% were had good knowledge, whereas 85% had above average knowledge,while none had fall in below average knowledge.

Conclusion: The study showed that the students had gained knowledge from self structured teaching program related to venous blood specimen collection and the knowledge level was raised.

Keywords*: Knowledge, Venous blood specimen, Nursing students*

INTRODUCTION

Blood analysis is one of the most important tool available to clinicians with in health care. Many people consider having blood test a simple procedure, but don't understand what take place behind it, when the blood is drawn and when the doctor makes a diagnosis[1].

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Need Of Study

Using blood and blood components is a common therapeutic procedure in hospitals. Nurses have an important role in safe and accurate method of blood specimen collection therefore it is crucial for nurses to have sufficient knowledge of the situations, amount of blood required and methods used for collecting the sample, and necessary care and safety measures in sample collection[5].

A study ie A study on "evaluation of knowledge of health care worker in 2009" revealed that 26.2% health care worker had low level knowledge, 22.1% had moderate level and 51.6% had acceptable knowledge. The study concluded that the health workers need to have more knowledge regarding blood collection. Another study i.e. A study on "Nursing blood specimen collection techniques and hemolysis rates in an emergency department" revealed that recollection of haemolysed blood specimens delays patient care in emergency departments. A prospective, cross-over study of blood collection techniques in a 64,000 annual visit, community teaching hospital emergency department was conducted. Retraining session was given for the nurse from emergency department, after this session nurses were randomly assigned to collect samples via intravenously. Blood samples were processed and assed for hemolysis, of these only 0.3% was found to be haemolysed.

Hence it was concluded that, trained nurses can reduce the number of haemolysed specimens by proper venipuncture technique[7].

So in reference to the above conducted studies the need arouse to assess the knowledge of future nurses regarding blood specimen collection. Thus to minimize errors assessment is primarily important.

Problem statement

"A pre-experimental study to assess the knowledge regarding venous blood specimen collection among student nurses studying at Army College Of Nursing Jalandhar Cantt."

Objective

- **To provide information to the student nurses (B.Sc. nursing 2nd year) regarding venous blood specimen collection.**
- **To assess the level of knowledge regarding venous blood collection through post test.**

Hypothesis

- **H1: After the post test the knowledge of students will be above average.**

Aim of the study

The aim of the study is to provide information and assess the level of knowledge of student nurses.

Delimitations

The present study is delimited to

- **Student of BSC Nursing 2nd year.**
- **Cognitive assessment**

Research approach

- **Quantitative research approach was adopted to assess the knowledge regarding venous blood specimen collection among student nurses studying at Army College Of Nursing Jalandhar Cantt.**

Research design

- **Pre-experimental (post-test) research design was used to achieve the stated goals in the present study.**

Research setting: Army College Of Nursing Jalandhar Cantt.

Sample: Students of B.Sc. Nursing 2nd yr studying in Army College Of Nursing Jalandhar Cantt.

Sample size: 40.

Sampling technique

- **Convenient sampling technique was used to collect the sample.**

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria:-

- **2nd yr students studying in Army College Of Nursing.**
- **2nd yr students practicing in Blood Collection Centre.**

Exclusion Criteria:-

Students who are on vacations and medical leave at the time of data collection.

Data collection tools

Section 1: demographic variables

This part consist of items for obtaining personal information about subjects such as age, seminar attended related to blood collection (no. of seminar attended) , exposure to blood collection centre(no. of weeks posting in BCC).

Section 2:-

- **A tool that is self structured questionnaire will be used.**
- **It consists of 40 questions (MCQ).**

Interpretation

Table no.: 1 knowledge assessment score 0-40

SUB SCORE	LEVEL OF KNOWLEDGE
0-10	Poor
11-20	≤ Average
21-30	≥ Average
31-40	Good

Content validity

The content validity of the tool was confirmed by experts opinion regarding relevance of the items. Experts were selected from various fields of specialization such as medical, nursing and pathology.

Reliability of the tool

Reliability of tool was computed by split half method. The reliability of tool was 0.85

Ethical considerations

Formal permission was taken from the Principal of the Army College Of Nursing Jalandhar Cantt. The proposal was put forward for consideration by the ethical committee of the college. Once approved the data was collected. Consent was taken from the students before data collection.

Plan and procedure for data collection procedure

The data collection for study was carried out in the month of march and april by using self structured questionnaire and convenient sampling technique from the students of B.Sc. Nursing 2nd Year who fulfil the inclusion criteria.

Plan and analysis of data

After the data collection data was organized, tabulated, summarized and analyzed using descriptive and inferential statistics according to the objective as follows-

Computation of frequencies and percentage for demographic data.

Analysis of data was planned according to objectives. Analysis and interpretation of data was done by using descriptive statistics such as percentage, mean, standard deviation.

Organization of analysis and interpretation is based upon two sections:

The analyzed data was organized according to objectives and presented under following sections:-

Section 1- Demographic characteristics of study samples.

Section 2- Assessment of level of knowledge after post test.

Section -A

Sociodemographic characteristics of the study sample of the following data depict the classification of the study sample by age, exposure and no. Of posting in blood collection centre:

Table 2:- Sociodemographic Distribution, frequency and percentage N=40

SOCIODEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE (%) DISTRIBUTION OF SAMPLE CHARACTERSTICS
AGE		
20 YEARS	27	67.5%
19 YEARS	8	20%
18 YEARS	5	12.5%
EXPOSURE		
SEMINAR	16	40%
PREVIOUS PERSONAL EXPOSURE	12	30%
CLASSROOM TEACHING	12	30%
POSTING		
NOT POSTED	3	7.5%
1-2 WEEKS	29	72.5%
3-4 WEEKS	8	20%

Section-B

Objectives:

To assess the level of knowledge regarding venous blood collection through post test

Table no.3 Percentage Distribution of level of knowledge regarding blood sample collection N=40

S.NO	EVALUATION CRIERIA (MARKS)	REMARKS	FREQUENCY	PERCENTAGE
1.	31-40	GOOD	6	15%
2.	21-30	Above average	34	85%

DESCRIPTION: Total 40 samples were taken for the study, out of which 15% were had good knowledge, whereas 85% had above average knowledge,while none had fall in below average knowledge.

Major findings

Total 40 samples were taken and the major findings were:

According to age distribution, the age group of 20 have good knowledge which shows that knowledge increases as per age.

According to previous exposure the majority students gained knowledge from seminar.

According to posting blood collection center majority of students gained knowledge via maximum posting ie,3-4 weeks.

DISCUSSION

Major findings

Total 40 samples were taken and the major findings were:

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- According to previous exposure the majority students gained knowledge from seminar.
- According to posting blood collection center majority of students gained knowledge via maximum posting ie, 3-4 weeks.

Studies supporting this study are

K.D.Barua (Punjab University, (2012) conducted a study to assess the knowledge of medical professionals regarding blood collection in Patiyala. Data was collected from 240 professionals using cross sectional study. A semi structured K.D.Barua (Punjab University, (2012) conducted interview and questionnaire was used to collect information. The study revealed that only 43.4%of professionals having good knowledge regarding blood collection. This study concluded that improving knowledge of professionals would have direct impact on improving techniques of blood collection.

W.L. (2012) Conducted a pre-experimental study to assess the effectiveness of planned teaching program on knowledge regarding sample collection in selected institute, Krishna hospital Mathura of nursing services on 60 professionals. Non probability purposive sampling tool used for data collection was a structured knowledge questionnaire.The result of the study revealed that the pre and post test data analysis revealed that mean post score (28.766+) was higher than mean pre test score (8.183+).The study concluded that planned teaching program regarding knowledge of sample collection was as effective method for providing adequate knowledge and help professionals to enhance their knowledge.

SUMMARY

The present study was undertaken with the objectives to provide knowledge and to assess the knowledge with post test regarding venous blood specimen collection. The study was conducted on Bsc. Nursing 2nd year at Army college of nursing, Jalandhar cantt.

The research design was pre-experimental in nature and 40 samples were studied.

Non-randomized, convenient sampling technique was used to select the sample. The tool used for the study was self structured questionnaire consisting 40 multiple choice questions. The tool was given to seven experts for the content validation.

CONCLUSION

The study showed that the students had gained knowledge from self structured teaching program related to venous blood specimen collection and the knowledge level was raised.

Implication

Nursing education: The result of the present study can be utilize as information and illustration for the nurses and the student.

Nursing practice: The present study can be utilize as a tool to assess the knowledge of future nurses regarding venous blood specimen collection and to reduce the chances of sampling error.

Nursing research: it will provide the baseline data for further clinical study in the same field.

Nursing administration: A nursing curriculum is the blue print to the student nurses carrier destiny. Drawing blood is one of the skills required of a registered nurse.

Nursing administrators can conduct seminars, lectures, demonstration on venous blood specimen collection.

Recommendation

- By keeping in view the study findings following recommendations were made:
- A similar study can be replicated in a large sample using other designs.
- Similar study can be conducted to evaluate the effectiveness of the teaching program on venous blood specimen collection.
- Same study can be conducted in different settings and population.

Limitation

1. The response time exceeded upto 30 minutes for each sample which was initially planned for 20 minutes.
2. The researcher was able to collect more number of overseas literatures than the Indian literatures.

Conflict of Interest: Nill

Source of Funding: Self

Ethical Clearance: Taken from ethical committee of Army College of nursing, Jalandhar Cantt, Punjab.

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