

A Study to assess the Effectiveness of Structured Teaching Program on Knowledge regarding Inotropic Drug Calculation among The Final Year Nursing Students in selected Nursing Colleges, Bangalore

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ABSTRACT:

Inotropic drugs are essential in the management of critically ill patients with cardiac failure or shock, as they help improve myocardial contractility and maintain adequate tissue perfusion. Since these drugs have a narrow therapeutic range and are often given as continuous infusions, accurate dosage calculation and administration are vital to ensure patient safety. Nursing students, especially in their final year, are expected to possess adequate knowledge and competency in drug calculation before entering professional practice. However, studies have revealed that many nursing students face challenges in performing accurate inotropic drug calculation. Therefore, this study aims to assess the effectiveness of structured teaching program on knowledge regarding inotropic drug calculation among final-year nursing students in a selected nursing college in Bangalore.

Keywords: Inotropic Drugs, drug calculation, Knowledge, final year Nursing students.

1. INTRODUCTION

Inotropes and vasopressors are essential pharmacological agents used to treat shock, a condition characterized by reduced perfusion to vital organs, leading to multiorgan dysfunction and potentially death. Vasopressors function by inducing vasoconstriction, thereby increasing systemic vascular resistance (SVR), mean arterial pressure (MAP), and organ blood flow. Inotropes enhance cardiac contractility and improve cardiac output (CO), which supports the maintenance of MAP and perfusion. Drug treatments given to patients in hospital are becoming increasingly complex. Sometimes, these treatment regimes involve potent and, at times, new and novel drugs. Many of these drugs are toxic or possibly fatal if administered incorrectly or in overdose. It is therefore very important to be able to carry out drug calculations correctly so as not to put the patient at risk. In current nursing practice, the need to calculate drug dosages is not uncommon. These calculations have to be performed competently and accurately, so as not to put not only the nurse but, more importantly, the patient at risk.

Need for the Study:

A medication error is not the same as an adverse drug reaction, although the two may overlap. Ferner and Aronson have defined a medication error as 'a failure in the treatment process that leads to, or has the

potential to lead to, harm to the patient'. They identified four different scenarios: adverse drug reactions that arise from medication errors; adverse drug reactions that do not arise from errors; medication errors that cause harms that are not adverse drug reactions; and medication errors that do not cause adverse events. According to a survey of Nursing staff it states that the nurses during mandatory skills sessions and were compares with incident report for medication error for previous 6 months .the survey response rate was 93.5%,72 nurses described 177 errors ,40.3 % observed an medications error in the previous week ,67.1%percent were prevented from reaching the patient and the like hood of prevention was reduced in the later stages of the medication process. Hence it was found necessary to train the nursing students approaching to the career about the calculation of inotropic drug administration during the practice to avoid possible medication errors and also to provide the sufficient knowledge about the importance of administration of inotropic agents.

2. OBJECTIVES:

- To assess the pre-test knowledge regarding inotropic drug calculation among the final year nursing students of Sapthagiri college of nursing, Bangalore.
- To assess the effectiveness of structured teaching program regarding inotropic drug calculation among the final year nursing students of Sapthagiri college of nursing, Bangalore.
- To assess the correlation between the pre-test and post-test knowledge regarding inotropic drug calculation among the final year nursing students of Sapthagiri college of nursing , Bangalore.

3. MATERIALS AND METHODS:

3.1.Source of data:

Data was collected from the final year nursing students in selected nursing colleges, Bangalore.

3.2.Research design:

In this study a Quasi Experimental research design has been used.

3.3.Research approach:

The research approach is quantitative approach.

3.4.Variables under study

3.4.1. Independent variables:

Structured teaching program on ionotropic drug calculation

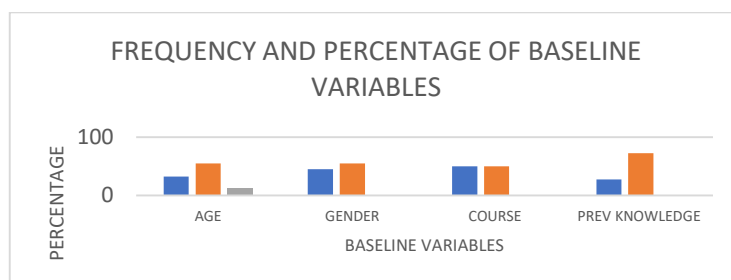
3.4.2. Dependent variables:

Knowledge is the dependent variable

3.5.Setting of the study:

The study was conducted in Sapthagiri college of nursing, Bangalore.

3.6.Population



3.6.1. Target population:

The target population will be Nursing students

3.6.2. Accessible population:

Accessible population are the final year nursing students studying in Sapthagiri college of nursing, Bangalore.

4. METHOD OF DATA COLLECTION:

4.1.Sampling procedure:

In this study simple random sampling method (lottery method)

4.2.Sample size:

40 final year nursing students were selected from lottery method.

4.3.Inclusion criteria:

- Final year nursing students
- Students who are present on the day of data collection.

4.4.Exclusion criteria:

Students who are absent on day of data collection

4.5.Instrument used

A tool to assess the demographic variable. Structured knowledge questionnaire to assess the knowledge level of the final year nursing students.

4.6.Data collection method:

The study was conducted for 3 days on nursing students who were identified as per the inclusion criteria. According to simple random sampling, lottery method was used to select the samples; data was collected from the subjects. After getting informed consent data was collected by using a semi-structured questionnaire.

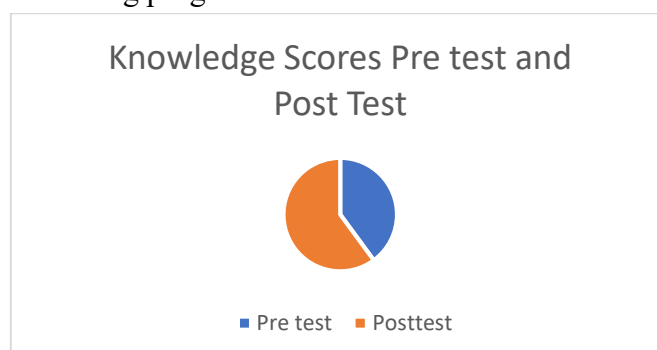
5. RESULTS:

SECTION-1: Distribution of nursing students based on the Baseline Variables

The majority of the samples belonged to 22-24 years of age(55%), female nursing students (55%) equally from both BSC Nursing (50%) and GNM nursing(50%) students and 27.5% of the samples had previous knowledge whereas 72.5% of the samples had no previous knowledge about ionotropic drugs calculations

SECTION 2: Comparison of knowledge scores of Pre Test and Post-Test

The data reveals that the mean and standard deviation of knowledge score in pre-test is 13.95 ± 4.84 and in the post-test group is 21 ± 3.64 , which indicated there is significant improve in the knowledge of the students after the structured teaching program.



SECTION 3: Correlation of Knowledge scores of Pre-test and Post-test of final year nursing students regarding the calculation of inotropic drugs

The data depicts that there is statistically significant correlation between the pretest and post-test scores of knowledge among final year nursing students regarding the inotropic drug calculation.

6. RECOMMENDATIONS:

- A further study can be conducted to assess the practice and attitude of the nursing students on ionotropic drug calculations.
- An experimental study to assess knowledge, practice and attitude on drug calculation among staff nurses in view of reducing the medication error in critical care units.

7. CONCLUSION:

Medications plays a vital role in treatment of the patients for improving their health and well-being. Medication error is the most common internal error in the hospital which can lead to minor to major complication sometimes even a death of the patient. Henceforth educating the final year students and newly joined staff nurses about the ionotropic drugs and its administration.

Drug calculation will give the accuracy of the dosage and right medication for the patient which helps in improving the conditions the patient. In this study it was mainly conducted for the final year nursing students which results in the increase in the level of knowledge from pre test to post test score. Therefore students gained a knowledge regarding the ionotropic drug calculation and its importance.

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