

# Assess The Knowledge Of Staff Nurses Working In Intensive Care Unit (Icu) Regarding The Use Of Inotropes In Critically Ill Patients.

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**Abstract:** *Congestive Heart Failure is a typical condition that happens when the heart can't supply enough blood to address tissue issues for oxygen and supplements. Inotropes assume a significant job in maintaining a strategic distance from cardiogenic shock. The compensative channel itself expands the load of the heart and they are constrained to broaden and span. In this condition, drug treatment is planned to improve the pumping capacity of the heart by utilizing inotropes and other protective measures. The study meant to survey the knowledge score of intensive care unit (ICU) staff nurses regarding the use of inotropes in critically ill patients in selected hospitals, Bhubaneswar, Odisha. A quantitative research approach with a non-experimental descriptive research design was used for the study. Total 50 no. of staff nurses were selected as sample by applying non-probability convenient sampling technique. The self-structured questionnaire was used as a tool to assess the knowledge level of intensive care unit staff nurses regarding the use of inotropes. Findings revealed that the mean and standard deviation of the knowledge score of staff nurses on the utilization of inotropes was  $7.58 \pm 2.59$ . The majority of study samples 36(72%) had fair knowledge; whereas 8(16%) samples had good knowledge & 6(12%) had poor knowledge regarding the use of inotropes. There was no significant association of knowledge level about demographic variables. The study presumed that there is have to upgrade the knowledge level of staff nurses to the use of inotropes to deliver qualitative care to ill patients.*

**Keywords:** *Knowledge, Inotropes, staff nurses, critically ill patients*

## INTRODUCTION

Cardiovascular diseases are the most driving reason for death worldwide; more than 17.9 million people die per year due to this i.e. an estimated 31% of all global death.<sup>1</sup> Most common cardiovascular diseases are coronary artery disease, myocardial infarction, congestive heart failure, heart attack, cardiomyopathy, congenital heart disease, pericardial disease, etc.<sup>2</sup>

The most commonly used drugs for the management of various cardiovascular conditions are inotropes such as adrenaline, noradrenaline, dobutamine, dopamine, isoprenaline and Milirinone etc. used to increase the power of muscular constriction and cardiovascular output.<sup>3</sup> The term inotrope state is most usually utilized about different medications that influence the power of shrinking of the heart muscle. An inotrope is a medium that adjusts the power or efforts of muscle constrictions. Both positive and negative type of inotropic drugs is utilized in the administration of different cardiovascular conditions. The choice of inotropes depends on specific pharmacological impact with response to the condition. Inotropic drugs help in improving cardiac output, easing respiratory congestion and improving the quality of cardiac muscle contraction and tissue perfusion. Negative inotropic activity diminishes the power of contraction whereas positive inotropic activity builds it.<sup>4</sup>

Staff nurses working in ICU are liable for directing inotropic drug that influences the patients cardiac functioning. She should know appropriate diluents of every medication and master in dose calculation to prevent administration errors.<sup>5</sup> She should be aware of the indication, mechanism of action, contraindications, and adverse reactions interactions of drugs. Also, they screen the patients for any negative indications and build up the nursing care plan to provide care to patients.<sup>6</sup>

Nurses' with insufficient pharmacological knowledge is accounted as one of the major critical factors aiding towards medication errors. The recurrence of these mistakes done by staff nurses & its effects influence the wellbeing of the patient as well as the general expanse of health care. Ultimately these harm to the nurses' personal and professional status, confidence, and practice. So, the nurses should be comfortable with the signs, contraindication, dose, & consequences of prescribed inotropic drugs for ensuring a safe and effectual drug regimen for the patients. Nursing staff, the care provider of the patients must have sufficient knowledge regarding its administration.<sup>5</sup> Many patients are admitted to ICU who are undergoing inotropes support. Nursing staffs provide care to them. ICU nurse is responsible for providing patient safety. Patient safety is increasingly recognized as essential in the practice of intensive care medicine. So, they should aware of guidelines for providing safety for the patient & must have adequate knowledge about its uses & administration. Hence the investigators have conducted the study to survey the ICU nursing staffs' knowledge level on utilization of inotropes.

## METHODS AND MATERIAL

In this study, a quantitative research approach and descriptive research design was used. The setting of this study was the SUM Hospital, Bhubaneswar. Population: it comprised of ICU staff nurses of selected hospitals. Sample: Staff nurses working under the selected hospitals, Bhubaneswar were selected as samples. Sampling technique: Convenient sampling technique was used. Sample size: Total 50 nos. of staff nurses were taken.

**Data Collection tool:** In the present study, socio-demographic questionnaires & self- structured knowledge questionnaire for assessing the knowledge regarding the use of inotropes was used to collect information.

**Tool- I: Socio-demographic questionnaires:** This tool consisted of 5 items that record demographic characteristics of responded participants, such as age, gender, professional qualification, working experience in ICU & Any continuing training program attended.

**Tool- II: Self- organized knowledge Questionnaire on use of inotropes:** This questionnaire consists of 15 no. of items dealing with the use of inotropes. Each item has few options with one correct answer. For each correct answer carries 1 point & incorrect answer carries 0 points. **Scoring:** Inadequate: 0-3: Poor. 4- 7: Fair & 8- 10: Good. The reliability value of the tool was 0.72.

## Data collection procedure

Data collection was carried out after obtaining a formal prior written permission from the authority of the selected Hospital for conducting the study through proper channel. The investigators were first introduced themselves & explained the purpose of gathering information. Based on inclusion & exclusion criteria, samples were selected. Then the respondents were assured that the privacy & confidentiality of their responses. Written consent was obtained from each respondent. By using convenient sampling technique, 50 no of samples were selected in this study. Then the information was collected from all 50 samples by using socio-demographic data tools and self- structured questionnaires tool to find out the knowledge on the use of inotropes. Then the investigators were thanked the participants for their cooperation & participation in this study.

## RESULTS

### Data Analysis

For the analysis of data, inferential statistics & descriptive statistics were used. Demographic data, knowledge score on use of inotropes were expressed in Frequency and percentage & chi-square test was done to find out the association between knowledge score with selected socio-demographic variables.

### Findings related to Description of study samples according to socio-demographic variables

**Table 1.** Description of study samples according to socio-demographic variables by using frequency & percentage.

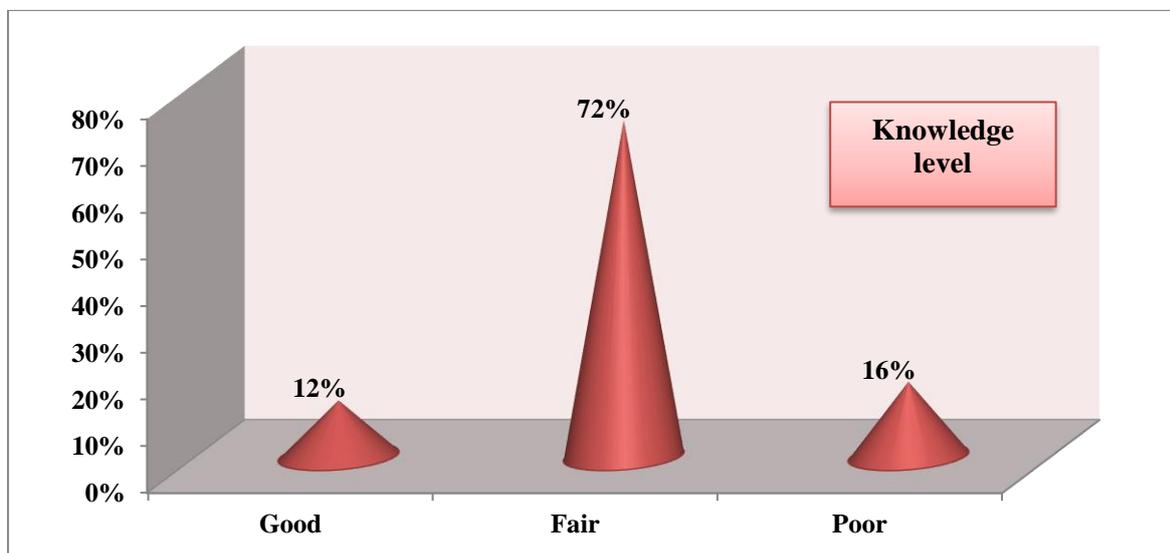
| Variables      | f  | %  |
|----------------|----|----|
| Age (in years) |    |    |
| a) 20- 30      | 25 | 50 |

|   |    |    |
|---|----|----|
| b) 31- 40                                       | 18 | 36 |
| c) >41  | 7  | 14 |
| <b>Gender</b>                                   |    |    |
| a) Male   | 10 | 20 |
| b) Female                                       | 40 | 80 |
| <b>Professional qualification</b>               |    |    |
| a) GNM  | 16 | 32 |
| b) B. Sc Nursing                                | 19 | 38 |
| c) P.B.B. Sc Nursing                            | 15 | 30 |
| <b>Working experience in ICU</b>                |    |    |
| a) <1yr   | 5  | 10 |
| b) ≥1yr   | 45 | 90 |
| <b>Any continuing training program attended</b> |    |    |
| a) Yes  | 23 | 46 |
| b) No   | 27 | 54 |

Table 1 shows that according to socio-demographic variables, half of the study samples (50%) were in between 20- 30yrs of age, majority of samples (80%) were females, maximum of the study samples (38%) had B. Sc. Nursing as their educational qualification, majority of the study samples (90%) had more than 1-year working experience in ICU, & maximum of the study samples (54%) were not attending the continuing training program.

**Findings related to the description of study samples according to knowledge on use of inotropes:**

Figure 1 reveals that according to the level of knowledge, the majority of study samples (72%) had fair knowledge, whereas 16% of samples had good knowledge & 12% had poor knowledge regarding the use of inotropes.



**Figure 1.** Bar diagram shows the distribution of knowledge level in staff nurses working in ICU on the use of inotropes by using percentage (%).

**Findings related to Chi-square analysis of knowledge level on the use of inotropes with selected socio-demographic variables**

It was revealed that the association between knowledge level & socio-demographic variables concerning age, gender, professional qualification, working experience and continuous nursing education program was statistically non-significant as calculated chi-square value was 0.234, 0.916, 0.473, 0.793 & 0.175 respectively, the calculated p-value was more than 0.05 level of significance.

Thus the null hypothesis is accepted and the alternative hypothesis is rejected.

## DISCUSSION

The findings of the study revealed that the mean knowledge score of staff nurses regarding the use of inotropes was  $7.58 \pm 2.59$ . The majority of study samples 36(72%) had fair knowledge; whereas 8(16%) samples had good knowledge & 6(12%) had poor knowledge regarding the use of inotropes. There was no significant association found between knowledge level to sociodemographic variables, i.e. age, gender, professional qualification, working experience & continuing training program attended.

This present study was contributed by the study entitled by assessing the knowledge regarding inotropic drug calculation among intensive care unit staff nurses in Nellore, directed by Ramya K, et al. (2019), as the result showed that the mean and standard deviation of knowledge was  $23.31 \pm 4.55$ . The majority of the sample had inadequate knowledge regarding the inotropic drug calculation & there was no association between knowledge & socio-demographic variables i.e. age, gender, and education & CNE program. It was found that staff nurses were having an inadequate level of knowledge on inotropic drug calculation.<sup>4</sup>

Similarly, it was supported by the study conducted by Tiwari A & Sen R (2019), entitled by a descriptive study to survey the knowledge of staff nurses on the administration of inotropic drugs in selected hospitals of Indore. The result revealed that the mean & standard deviation of knowledge was  $8.06 \pm 7.45$ . Maximum (50%) of the study sample had poor knowledge regarding the administration of inotropic drugs & there was no association of knowledge score regarding the administration of inotropic drugs score concerning age, gender, professional qualification, work experience and continuous nursing education program. It was concluded that a proper training program is required for enhancing the knowledge of staff nurses regarding the administration of inotropic drugs.<sup>7</sup> Also it was supported by the study conducted by Paul P (2019), entitled with the effect of educational program on knowledge of staff nurses working in ICU'S on selective vasoactive and inotropic drugs in SDM Hospital, Dharwad. The results showed that according to gender, the majority of sample 31(77.5%) had females. This finding is similar to the present study.<sup>8</sup>

## CONCLUSION

Staff Nurses are the foundation of the health care system. They play an important role in ensuring patient care. So, proper educational & training programs are required to enhance the knowledge of staff nurses regarding the use of inotropes which ultimately helped them to provide effective cardiac to the patients.

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## DECLARATIONS

*Funding: Funding sources was not there*

*Conflict of interest: Not declared*

*Ethical Permission: Approved*

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