“Assessment of knowledge and skills of critical care registered nurses on inotropic drug calculation in order to prepare and validate a SIM”

Ms. SREELATHA M. R.
M.Sc. in Medical Surgical Nursing
Sinhgad College of Nursing, Pune.
Latha72272@gmail.com

INTRODUCTION

“The unique function of the nurse is to assist the individual sick or well in the performance of those activities contributing to health or its recovery or to peaceful death, that he would perform unaided if he had the necessary strength, will or knowledge and to do this in such a way as to rapidly to gain independence as possible”.

Medication administration is a critical skill of the professional nurse, who must understand and follow various steps in the drug administration process to assure patient safety. The nurse must be proficient in medication dosage calculation to safely administer drugs. However, many medical-surgical nurses experience difficulty when calculating drug dosages. One study revealed that 56% of nurses could not calculate medication dosages to a 90% proficiency rate. In addition, nurses made significantly more errors in calculating intravenous drug dosages as compared to oral, intramuscular, or subcutaneous drug dosages.

PROBLEM STATEMENT

‘Assessment of knowledge and skills of critical care registered nurses on inotropic drug calculation in order to prepare and validate a SIM.’

OBJECTIVES OF THE STUDY

To assess the knowledge and skills of inotropic drug and its calculation among critical care registered nurses.

To find the correlation between knowledge and skills with selected background variables of critical care registered nurses on inotropic drug calculation.

To validate the content of an inotropic drug calculation SIM for staff nurses working in critical care unit.

RESEARCH METHODOLOGY

The descriptive approach was used in this study. The study was conducted on 100 staff nurses working in critical care unit who fulfilled the inclusion criteria of this study. A stratified random sampling technique was used to select the participants. The study was conducted in the coronary care unit of a selected hospital. In this study, the variables are: knowledge of inotropic drugs and inotropic drugs calculation skills among registered nurses working in the critical care unit. The study population consisted of staff nurses who completed nursing degree or diploma and working in critical care unit of selected hospital were included in this study. Out of 100 staff nurses, 57 selected from general critical care unit,
17 from intensive coronary care unit, and 26 from cardiac recovery.

**RESEARCH FINDINGS**

**Section I**

The study shows that more than half (57%) of the subjects were working in general critical care unit. Gender wise, there was equal distribution of subjects in the male and female groups (51% and 49%). In the distribution of level of education a majority (72%) of subjects was in the category of BSc Nursing and the remaining (28%) of the subjects are in the category of GNM.

**Section II**

Description of participant’s level of knowledge of inotropic drugs of staff nurses working in critical care unit of the selected hospital.

The data shows that the majority of (36% and 37%) lies between the knowledge score of 6-9, and below 6. Minority, that is (6%), lies between 12-15 knowledge score.

**Table:** Mean and standard deviation of knowledge level of inotropic drugs

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge level of inotropic drugs</td>
<td>7.68</td>
<td>2.8944</td>
</tr>
</tbody>
</table>

**Section III**

Description of participant’s level of calculation skills of inotropic drugs of staff nurses working in critical care unit of the selected hospital.

**Figure:** Pie diagram showing calculation skill score of inotropic drugs of staff nurses working in critical care unit.

**Table:** Mean and standard deviation of calculation skills of inotropic drugs

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculation skills of inotropic drugs</td>
<td>7.65</td>
<td>3.3537</td>
</tr>
</tbody>
</table>

**Section IV**

Correlation of knowledge of inotropic drugs of different background variables of staff nurses working in critical care unit from selected hospital.

Regarding correlation between age and knowledge of inotropic drugs among critical care working staff nurses, 93% respondents in the age group of 20-30 years have moderate knowledge level compared to 7% of respondents in the age group of 30-40 years.

The statistical findings depict that there is exists no significant association between age and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 7.57, p > 0.05$)

Correlation between gender and knowledge of inotropic drugs among critical care working staff nurses, 51% male respondents have moderate knowledge level as compared to 49% of female respondents.
Regarding correlation between education and knowledge of inotropic drugs among critical care working staff nurses, 28% respondents having a diploma in nursing (GNM) have moderately less knowledge level as compared to 72% of respondents having a degree in nursing. The statistical findings depict that there is a significant association between education and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 12.72, p < 0.05$)

Correlation between experience and knowledge of inotropic drugs among critical care working staff nurses, 49% of respondents having 0-1 year of experience, 27% of respondents having 1-2 years of experience, 12% of respondents having 2-3 years of experience, 7% of respondents having 3-4 years of experience, 5% of respondents having more than years of experience, moderate influence of knowledge of inotropic drugs among the staff nurses. However the statistical findings depict that there is no significant association between experience and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 12.37, p > 0.05$).

Regarding correlation between area of experience and knowledge of inotropic drugs among critical care working staff nurses, 57% respondents have experience in general critical care unit, 17% of respondents have experience in coronary care unit, 26% of respondents have experience in cardiac recovery had moderate factors influencing knowledge of inotropic drugs. The statistical findings depict that there is a significant association between area of experience and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 13.782, p < 0.05$)

Correlation of calculation skills of inotropic drugs of different background variables of staff nurses working in critical care unit of the selected hospital.

Regarding correlation between age and calculation skills of inotropic drugs among critical care working staff nurses, 93% respondents in the age group of 20-30 years have moderate calculation skills compared to 7% of respondents in the age group of 30-40 years. The statistical findings depict that there is significant association between age and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 9.675, p < 0.05$)

Correlation between gender and calculation skills of inotropic drugs among critical care working staff nurses, 51% male respondents having moderate calculation skills as compared to 49% of female respondents. However the statistical findings depict that there is no significant association between gender and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 4.305, p > 0.05$).

Regarding correlation between education and calculation skills of inotropic drugs among critical care working staff nurses, 28% respondents have a diploma in nursing (GNM) having moderate calculation skills as compared to 72% of respondents have a degree in nursing. The statistical findings depict that there is significant association between education and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 11.893, p < 0.05$)

Correlation between experience and knowledge of inotropic drugs among critical care working staff nurses, 49% of respondents having 0-1 year of experience, 27% of respondents having 1-2 years of experience, 12% of respondents having 2-3 years of experience, 5% of respondents having more than years of experience, moderate influence of knowledge of inotropic drugs among the staff nurses. However the statistical findings depict that there is no significant association between experience and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 12.37, p > 0.05$).

The statistical findings depict that there is a significant association between area of experience and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 13.782, p < 0.05$).
respondents having 2-3 years of experience, 7% of respondents having 3-4 years of experience, 5% of respondents having more than years of experience, moderate influence of calculation skills of inotropic drugs among the staff nurses.

However the statistical findings depict that there is no significant association between experience and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 = 8.64, p >0.05$)

Regarding correlation between area of experience and knowledge of inotropic drugs among critical care working staff nurses, 57% respondents have experience in general critical care unit, 17% of respondents have experience in coronary care unit, 26% of respondents are have experience in cardiac recovery had moderate factors influencing calculation skills of inotropic drugs.

The statistical findings depict there is no significant association between area of experience and knowledge of inotropic drugs among staff nurses working in critical care units. ($\chi^2 =14.848, p >0.05.$)

REFERENCE