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A study to evaluate the effectiveness of an educational program on Confusion Assessment Method (CAM-ICU) in enhancing ICU delirium knowledge and skills among ICU nurses in selected hospital of Gurugram, Haryana

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ABSTRACT
Delirium is a major barrier to the care of patients admitted in the intensive care units globally. The Society of Critical Care Medicine recommends regular delirium monitoring among patients admitted in ICU. Methods: One group Pre-test Post-test Research design was adopted in this study. The study was conducted in 100 ICU nurses were selected by using purposive sampling technique. The data was analysed for frequency, percentage, mean, standard deviation. The effectiveness of training was analysed by pair-test. Association between pre-test level knowledge and demographic variables was analysed by using Fisher's Exact test. Conclusion: The findings indicate a significant improvement in post-test knowledge and skills scores compared to pre-test scores and the increase was statically significant at $p<0.05$. There is no statistically significant association between post-test knowledge scores and any of the demographic variables ($p > 0.05$). The study findings suggests that educational program in a regular period will help in gaining knowledge & improving skills regarding ICU delirium among ICU nurses.

INTRODUCTION

One of the most frequent issues that patients in intensive care units (ICUs) face is delirium. It can be characterized by abrupt, erratic shifts in mental states, including disordered thought patterns, inattention, and abnormalities in perception. As many as 83% of intensive care unit patients on mechanical ventilation have delirium, according to Ely et al. [(1)] The Issues with the ICU Delirium, a higher death rate, an extended mechanical ventilation, longer lengths of stay in the ICU, higher incidence of unintentional removal of catheters, endotracheal tubes, and urinary catheters, higher incidence of ICU readmissions. [(2)] Numerous studies validate the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU), which was suggested by the National Institute for Health and Clinical Excellence (National Clinical Guideline Centre UK, 2010). In the intensive care unit, nurses

faced a number of difficulties when tending to delirious patients who were more agitated. It is presumed that nurses working in such circumstances are unable to deliver the necessary level of nursing care.[11]

OBJECTIVES

1) To assess the pre-test level of knowledge and skills regarding ICU Delirium and CAM-ICU among ICU nurses.

2) To assess the effectiveness of educational programme on knowledge and skills regarding ICU Delirium and CAM-ICU among ICU nurses after implementing educational program.

3)To find out association between post-test knowledge and skills regarding ICU Delirium and CAM-ICU among ICU nurses with selected demographical variables of ICU nurses.

MATERIALS AND METHODS

Quantitative research approach using One Group Pre and Post-Test Research Design was adopted. The study was conducted among 100 ICU nurses working in selected hospital. Nurses who meet the inclusion criteria were selected by using purposive technique.

DATA COLLECTION INSTRUMENT AND TECHNIQUE: TOOL

Section A: Self report questionnaire consisted of age, gender, education, years of experience, and area of working, and any previous knowledge on ICU delirium.

SECTION B: Self structured knowledge 30 questionnaires under following headings, Definition, Types, ,Symptoms and Feature of CAM-ICU .

SECTION C: Self structured skill checklist for assessing the CAM-ICU skill was made from following headings, I) Preparation, II) Acute Mental Status Change, III) Inattention IV) Altered Level of consciousness) V) Disorganized Thinking and VI) Interpretation of Results.

RESULTS AND DISCUSSION

Table 1: Frequency and percentage distribution of demographic variables of ICU nurses

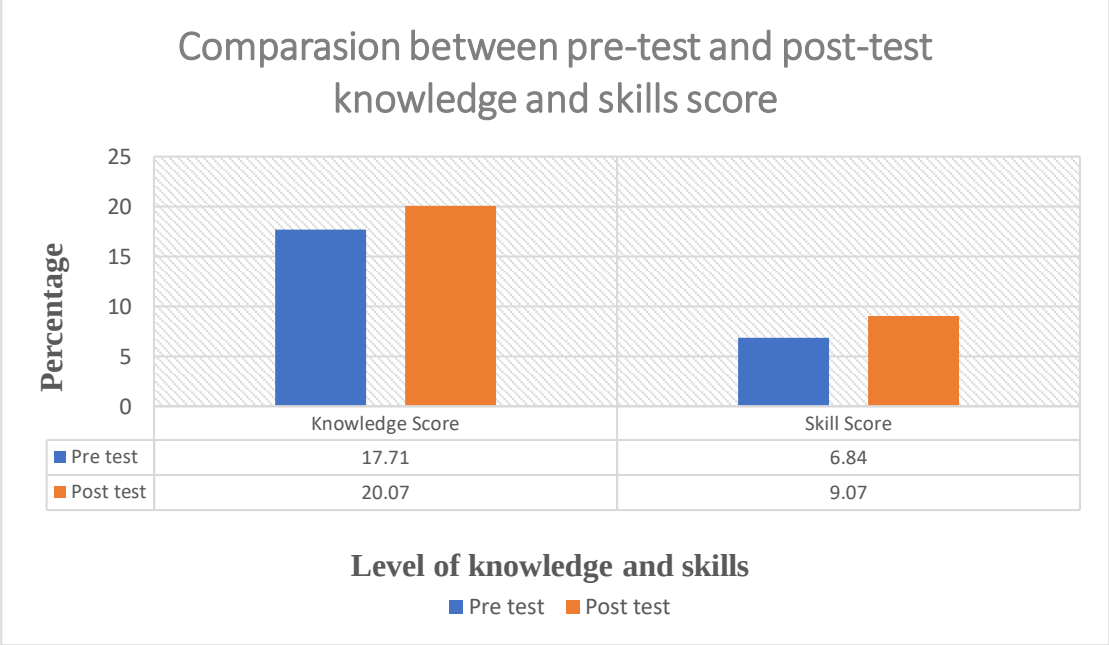
N=100

Demographic Variables	Frequency	Percentage
Age		
a) Less than 30 yrs	81	81%
b) 31-40 years	19	19%
c) 41-50 years	0	0%
d) > 50 years	0	0%
Gender		

a) Male	21	21%
b) Female	79	79%
Educational Qualification:		
a) GNM	43	43%
b) BSC Nursing	55	55%
c) MSC Nursing	2	2%
Years of Experience in Critical Care Nursing:		
a) 0-2 years	57	57%
b) 3-5 years	31	31%
c) 6-10 years	9	9%
d) More than 10 years	3	3%
Do you have any previous knowledge about ICU Delirium		
a) Yes	41	41%
b) No	59	59%
Which of the following ICU you belong?		
a) Gastro ICU	42	42%
b) Mult speciality ICU	58	58%

The data presented in table no. 1 shows that approximately half of the participants (81) were under the age of 30, while there were (19) participants in the 31-40 age range. It indicates that a majority of the participants (79) were female, with (21) participants being male. Concerning education, nearly half of the participants (55) held a bachelor's degree, followed by (43) participants with a diploma and (2) with a postgraduate degree. More than half of the participants (57) had 0-2 years of experience, (31) participants had 3-6 years of experience, (9) had 6-10 years of experience, and only (3) participants had over 10 years of experience. More than half of the participants 59 not attended the before any training and 41 participants had attended training. Majority of the participants 58 were working in Multi-speciality ICU followed by 42 participants working in Gastro ICU.

Fig.: 1 Bar graph showing comparison between pre-test and post-test knowledge and skills score



The figure shows a comparison between pre-test and post-test knowledge and skills scores expressed in percentages. The mean pre-test knowledge score was 17.71%, which increased to 20.07% in the post-test, indicating an improvement in participants' knowledge after the intervention. Similarly, the mean pre-test skill score improved from 6.84% to 9.07% in the post-test, reflecting enhanced skill performance following the intervention.

Table 2: Mean, Mean difference, Standard deviation and 't' value of knowledge and skills regarding ICU delirium and CAM-ICU

	Knowledge				Skills			
	Mean ± SD	**Mean Difference**	**T value**	**P value**	**Mean ± SD**	**Mean Difference**	**T value**	**P value**
Pre-test	17.71± 1.52	2.36	15.001	0.000*	6.84 ± .0982	2.23	13.511	0.000*
Post-test	20.07 ±1.62				9.07± 1.34			

This table 2 presents that there increase in the post-test level of knowledge and skills as compared to the pre-test level of knowledge and skills and the increase is stastically significant at p value 0.00.

Table 3: Association between post-test knowledge of ICU nurses regarding ICU delirium and CAM-ICU with the selected demographic variables

N=100

Demographic Variables	Moderately Adequate Knowledge	Adequate Knowledge	Calculated F & t value	df	P value
Age					
a) Less than 30 yrs	78	3	48.09	40	.178^{NS}
b) 31-40 years	15	4			
c) 41-50 years	0	0			
d) > 50 years	0	0			
Gender					
a) Male	19	2	27.46	32	.696^{NS}
b) Female	74	5			
Educational Qualification:					
a) GNM	42	1	37.75	48	.856^{NS}
b) BSC Nursing	49	6			
c) MSC Nursing	2	0			
Years of Experience in Critical Care Nursing:					
a) 0-2 years	57	0	61.52	64	.565^{NS}
b) 3-5 years	29	3			
c) 6-10 years	7	2			
d) More than 10 years	1	2			
Do you have any previous knowledge about ICU Delirium					
a) Yes	39	2	38.59	40	.533^{NS}
b) No	54	5			
Which of the following ICU you belong?					
a) Surgical ICU	0	0	36.93	40	.609^{NS}
b) Gastro ICU	38	4			
c) Mut speciality ICU	55	3			

Significant at p <0.05 level

NS= Not significant

The data represented in table 9 shows that the chi-square values showing that the post-test knowledge scores regarding ICU delirium among nurses was not associated with the selected demographic variables as chi square values were not found to be statically significant at 0.05 level of significance.

CONCLUSION

Among 100 participants, In the pre-test, 3% of had inadequate knowledge,97% had moderately knowledge, and no one had adequate knowledge and skills levels related to CAM-ICU, 33% of nurses demonstrated poor skills, 65% had fair skills, and only 2% showed good skills. The mean knowledge score increased from 17.71 ± 1.52 (pre-test) to 20.07 ± 1.62 (post-test), with a t-value of 15.001 and a p-value of 0.000, indicating a statistically significant improvement. Similarly, the mean skill score rose

from 6.84 ± 0.982 to 9.07 ± 1.34, with a t-value of 13.511 and p-value of 0.000. The results confirm that the educational program significantly enhanced both knowledge and skills related to ICU Delirium and CAM-ICU. Among all demographic variables, only years of experience in critical care nursing showed a significant association with post-test skill levels (p = 0.041), indicating that clinical experience contributes to better practical skill performance. Other factors like age, gender, education, prior knowledge, and ICU type did not significantly influence skill outcomes.

In conclusion, the findings of this study affirm that structured educational programmes play a crucial role in equipping ICU nurses with the necessary knowledge and skills to effectively assess and manage delirium. Such interventions can ultimately contribute to early detection, timely management, and improved outcomes for critically ill patients. The study reinforces the need to prioritize delirium assessment training in ICU nurse orientation and ongoing in-service education programs.

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