Original Research Article

Effectiveness of In-Service Training Programme on Level of Knowledge and Practice in Assessing the Critical Ill Patient by Using Sequential Organ Failure Assessment Score (SOFA) Among Staff Nurses

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ABSTRACT

Background: Multiple Organ Dysfunction Syndrome (MODS) is most important complication in Surgical Intensive Care Units (SICUs). Mortality rates for surgical and medical ICU patients with MODS range from 44 to 76%. Sepsis is more common in CCU's which leads to MODS. Hence, these are the place where we need to concentrate. If we take prior action we can save the patient early from occurring MODS. Sofa score is the effective tool to identify the patient from MODS and start the earlier management. The staff nurses are the people who are with the patient for 24 hours. The present study was aimed to determine the Effectiveness of in- service training programme on level of knowledge and practice in assessing the critical ill patient by using sequential organ failure assessment score (SOFA) among staff nurses.

Materials and Method: Pre-experimental research design was adopted. 60 samples were assigned using purposive sampling technique. Data was analyzed by descriptive and inferential statistics.

Result: The study findings reveled that In-service training programme was effective in improving knowledge and skill in assessing the critical ill patient by using SOFA score among Staff Nurse.

Conclusion: Staff Nurses working in CCU has inadequate knowledge and practice on SOFA score for assessing the critically ill patient, after the in-service training programme the knowledge and practice on assessing the critically ill patient by using SOFA score was increased in knowledge and practice

Key Terms: In-Service training programme, Sequential Organ Failure Assessment Score, Critically ill patient.

INTRODUCTION

Multiple Organ Dysfunction Syndrome (MODS) is most important complication in Surgical Intensive Care Units (SICUs). Mortality rates for surgical and medical ICU patients with MODS range from 44 to 76%. For people, Sepsis is the main cause of MODS, and it is common in ICU patient when compared with death due to other illness, it is stated that 9.3% of human deaths in the United States were related to severe sepsis. [1]

In India daily deaths related to sepsis is around 300 in numbers. [2] Multiple organ dysfunction syndrome (MODS) is the failure of two or more organ systems in an acutely ill patient, intervention are needed to maintain homeostasis.

Sepsis is more common in CCU's which leads to MODS. [3] Hence, these are the place where we need to concentrate. We have to take earlier steps in sepsis from occurring MODS.

Based on the above study it's proved that the SOFA score is best tool to identify the patient from MODS and start the earlier management. The staff nurses are the people 24*7 hours with the patient so it will be effective when SOFA score is taught and practice by them to identifying the case to initiate basic measures and inform about the condition to the doctors.

Statement of the Problem:

"A Study to assess the Effectiveness of In-Service Training Programme on Level of Knowledge and Practice in assessing the Critical Ill Patient by using Sequential Organ Failure Assessment Score (Sofa) among Staff Nurses at SMVMC&H, Puducherry."

OBJECTIVES:

- To assess the level of knowledge and practice regarding SOFA score among staff nurses
- To evaluate the effectiveness of In-service education in terms of knowledge and practice regarding SOFA score
- To correlate the knowledge and practice before and after In-service education programme regarding SOFA score.
- To associate the level of knowledge and practice regarding SOFA score among staff nurses with their selected demographic variables.

HYPOTHESES:

• H_1: There will be significant difference between the level of knowledge & practice among staff nurses before and after the in-service program.

• H_2: There will be significant association between levels of knowledge & practice on SOFA score among staff nurses with their selected demographic variables.

• H_3: there will be significant correlation between knowledge and practice regarding SOFA sore among staff nurses.

MATERIAL AND METHOD

The research design adopted for the study was one group pretest posttest design.

The study population consisted of Staff Nurses who had working in critical care unit. Purposive Sampling technique was used to select the samples for this study. The sample size was calculated based on the power analysis at the power of 55%.The institutional Human ethical approval was obtained. The informed consent was obtained from the participants. A structured interview was used to collect the demographic variables. Self-administered closed ended questions were used to assess the knowledge regarding SOFA score. The Self-administered closed ended questions reliability value was r= 0.731 and observational checklist was used to assess the practice on SOFA score. The r=0.782 is the reliability value for observational checklist. The data collection was done for a period of 6 weeks. After self-introduction by researcher a pretest was done to assess the level of knowledge regarding SOFA score and to assess the practice on SOFA score. On the 1st day of data collection, Knowledge will be assessed by using MCQ and practice will be assessed by using observational checklist on SOFA score. On the next day of data collection in- service Training Programme was conducted to the Staff Nurses regarding SOFA score. On 7th day same like as pretest, posttest was conducted to find the effective of in- service Training Programme.

STATISTICAL ANALYSIS:

The data analysis was done using SPSS software 16 epidata version 2.2.2.186. The investigator used Descriptive statistics, such as number, percentage, mean, and standard deviation, were used to present the descriptive characteristics of the staff nurse. Inferential statistics such as Paired t-test is used to compare the pre-test and post-test scores among patients Chi-square test determines the association of pre test scores with the selected Background Variables. Analyzed data is presented in the form of tables, diagrams, graphs based on the findings.

RESULT

The following results were obtained when the data were collected from the patients.

Socio demographic Variables:

In age it shows that many of them 57(95%) belongs to the group of 20-30, 3(5%) belongs to the group of 31-40 years. Gender shows that majority of them, 51(85%) belongs to Female and 9(15%) belongs to Male. Over All Nursing Experience shows that majority of them, 56(93.3%) were having the experience of 5-10 years. Experience in critical care unit shows that majority of them, 35(58.3%) were having experience of 1-5 years and 25(41.7%) having experience of < 1 year in CCU.
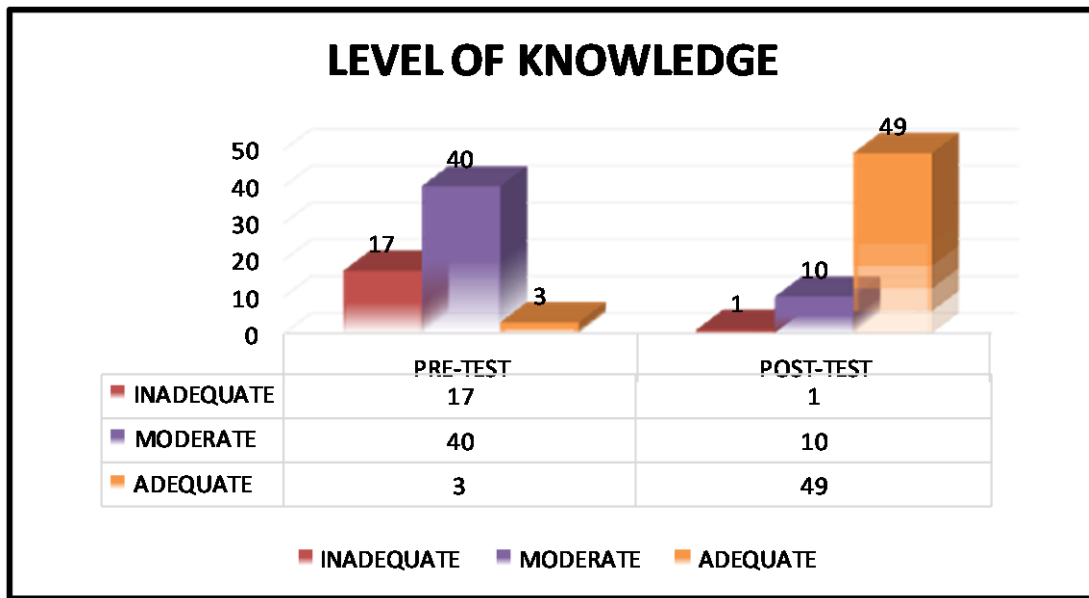

Figure 1: Bar Diagram shows the frequency and percentage wise distribution level of knowledge before and after intervention

The present study findings reveals that in pre-test majority of them has 40(66.7%) moderate knowledge, 17(28.3%) has inadequate knowledge, 3(5%) has adequate knowledge among staff nurses. In post-test majority of them 49(81.7%) has adequate knowledge in SOFA score, 10(16.7%) has moderate knowledge and 1(1.7%) has inadequate knowledge among staff nurses.
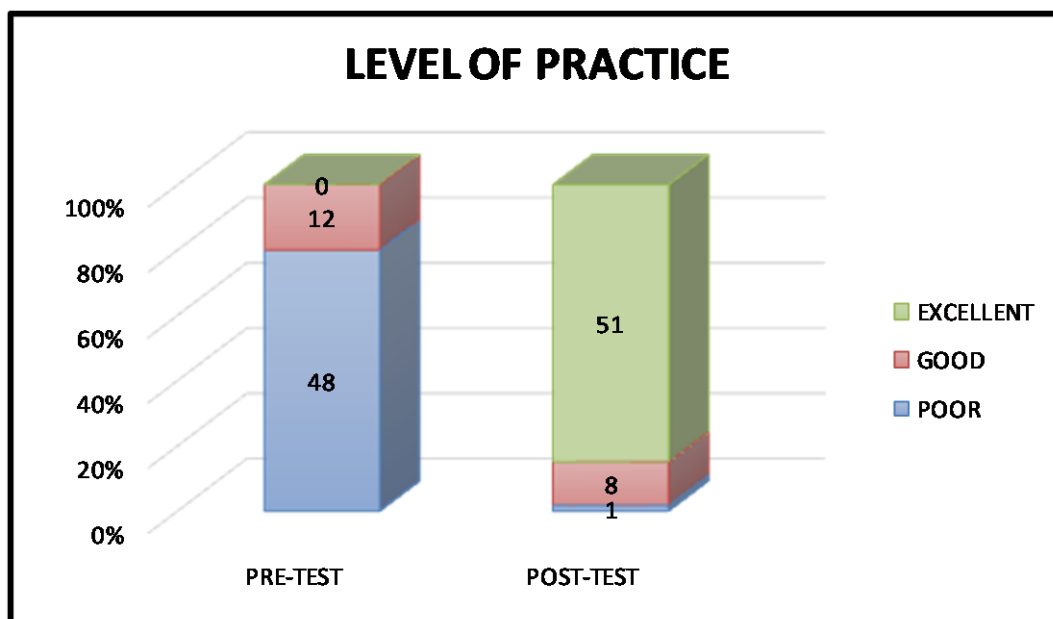

Figure 2: Bar Diagram shows the frequency and percentage wise distribution on level of practice before and after intervention

In pre-test practice 12(20%) has good practice in SOFA score and 48(80%) has poor practice of SOFA score among staff nurses. In post-test of application SOFA score among Staff Nurses 51(85%) has excellent, 8(13.3%) has good practice, and 1(1.7%) has poor practice.

Table- 1: Mean and standard deviation of pre-test level of knowledge and practice of SOFA score in assessing the critically ill patient among staff nurses in CCU.

	MEAN	STANDARD DEVIATION	'R' TEST	'P' VALUE
Pre-test level of knowledge	1.7667	0.532	0.063	0.032*
Pre- test level of practice	1.200	0.403		

TABLE-2: Mean and standard deviation of post-test level of knowledge and practice of SOFA score in assessing the critically ill patient among staff nurses in CCU.

	MEAN	STANDARD DEVIATION	'R' TEST	'P' VALUE
Post-test level of knowledge	2.800	0.443	-0.183	0.001**
Post- test level of practice	2.833	0.418		

The pre-test was assessed by total range score. Out of that the overall average score in knowledge is 1.766 with standard deviation of 0.532 and in practice average score is 1.200 with standard deviation of 0.403, after the implementation of In-service education regarding sofa score the level of knowledge was improved to 2.800 with standard deviation of 0.443 and in practice 2.833 with standard deviation of 0.418. The improvement was statistically tested. The result found to be significant at P<0.001, because of the intervention. It indicates that the in-service education was very effective to improve the level of knowledge and practice regarding sofa score among staff nurse working in CCU.

The positive correlation in the pre-test between the knowledge and practice of SOFA score in assessing the critically ill patient
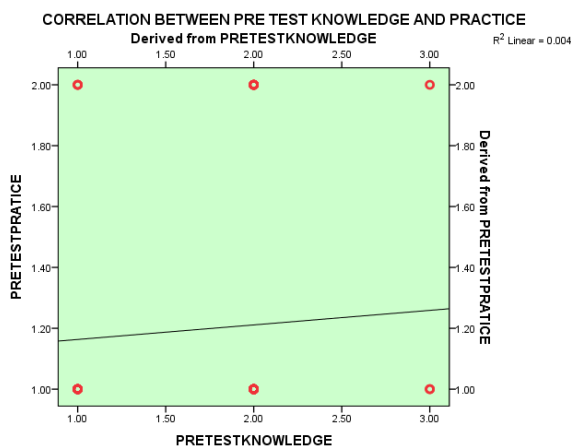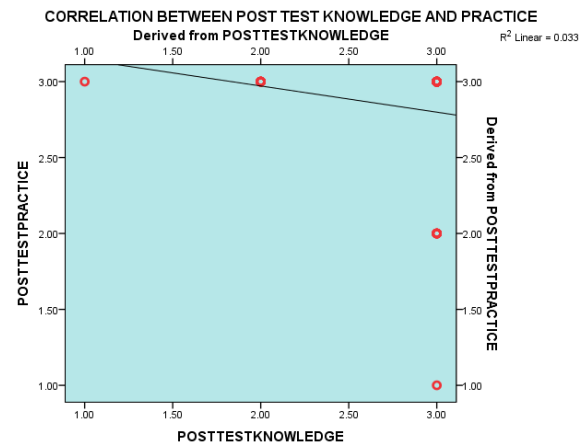

Figure- 4 Correlation between posttest knowledge and practice

The negative correlation in the post-test between the knowledge and practice of SOFA score in assessing the critically ill patient

The association between selected demographic variables with post-test level of knowledge. It was statistically found that the age, area of working, has significantly relationship with post-test score at the level of p<0.05

Figure- 3 Correlation between pretest knowledge and practice

TABLE-4: Association between the post-test level of knowledge among staff nurses working in CCU with their selected demographic variables.

S.NO	BACKGROUNDVARIABLES	POST TEST KNOWLEDGE						χ^2	P VALUE
		INADEQUATE		MODERATE		ADEQUATE			
		F	%	F	%	F	%		
1.	Age in years Years							20.430	0.000**
	20-30	0	0	9	15.8	48	84.2		
	31-40	1	33.3	1	33.3	1	33.3		
	>40	0	0	0	0	0	0		
2.	Area of Working							12.936	0.002*
	ICU	1	10	1	10	8	80		
	SICU	0	0	6	40	9	60		
	RICU	0	0	1	10	9	90		
	ICCU	0	0	1	11.1	8	88.9		
	Casualty	0	0	1	6.2	15	93.8		

TABLE-5: Association between the post-test level of practice among staff nurses working in CCU with their selected demographic variables.

S.NO	BACKGROUNDVARIABLES	POST TEST PRACTICE						χ^2	P VALUE
		POOR		GOOD		EXCELLENT			
		F	%	F	%	F	%		
1.	Age in years Years							0.557	0.057*
	20-30	1	1.8	8	14	48	84.2		
	31-40	0	0	0	0	3	100		
	>41	0	0	0	0	0	0		
2.	Area of working							8.261	0.008*
	ICU	1	10	1	10	8	80		
	SICU	0	0	2	13.3	13	86.7		
	RICU	0	0	3	30	7	70		
	ICCU	0	0	1	11.1	8	88.9		
	Casualty	0	0	1	6.2	15	93.8		

The association between selected demographic variables with post-test level of practice. It was statistically found that the age, area of experience have significantly relationship with post-test score.

DISCUSSION

The first objective of the present study findings reveals that before giving intervention of In-service education the level of knowledge and practice

Present study findings reveals that Among 60 staff nurses 3(5%) of them has adequate knowledge, 40(66%) has moderately adequate knowledge and 17(29%) inadequately knowledge. This might be due to lack of awareness of knowledge on SOFA score in the ICU Present study findings reveals that before giving intervention of In-service education the level of practice among 60 staff nurses 48(80%) of them has poor practice, 12(20%) has good practice and non are there in excellent practice. This might be

due to lack of exposure towards the practice of SOFA score in the CCU

Finding is consistent with similar study done by Masoumeh Bageri et.al (2015))on conducted a study on effect of education on the knowledge and attitude of intensive care unit staff towards the use of SOFA score this study too supported that before giving the intervention on SOFA score the knowledge and attitude of the staff were the knowledge level was reported to be very low, low, moderate, and high in 81.67%, 8.33%, 3.33%, and 6.67% of the participants, respectively. [4]

The second objective of the present study findings reveals that After giving intervention of In-service training programme the level of knowledge was assessed by using self-structured questioners among staff nurses working in CCU among 60 staff nurse 49(81.7%) has adequate knowledge, 10(16.7%) has moderately knowledge and 1(1.7%) where inadequately knowledge

Present study findings Reveals that after giving intervention of In-service education the level of practice among 60 staff nurses 1(1.7%) of them has poor practice, 8(13.3%) has good practice and 51(85%) are there in excellent practice. This shows that intervention is effective towards the practice of SOFA score in the CCU

The third objective is to associate the level of knowledge and practice regarding SOFA score among staff nurse with demographic variables. Reveals that association between selected demographic variables with post-test level of knowledge. It was statistically found that in the age 48(84.2%) adequate knowledge and 9(15.8%) has moderately knowledge were belong to 20-30 years of age group and 31-40 years age group has 1(33.3%) inadequate knowledge. It is statistically proved and highly significantly has p value of 0.000.

According to area of working majority of them 15(93.8%) were belong to casualty, 9(90%) were belong to RICU has adequate knowledge and in ICU 1(10%) were belong to inadequate knowledge statistically proved significant p value (0.002).

It was statistically found that in the age 48(84.2%) excellent practice and 1(1.8%) has poor were belong to 20-30 years of age group and 31-40 years age group has 3(100%) excellent practice in this its proves that shows that based on my in-service training programme the practice level is improved and has significant p value is 0.057

According to area of working majority of them 15(93.8%) were belong to casualty, 8(88.9%) were belong to ICCU and SICU 13(86.7%) were belong to excellent practice. It is also statistically proved significant p value (0.008).

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