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Knowledge On Scoring System Used In Critical Care Unit Among Nursing Students In Selected Colleges Of Kamrup, Assam: A Descriptive Study

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ABSTRACT

BACKGROUND

Scoring System were developed for the quantification and standardization of the severity of acute illnesses and for the prediction of outcome and to compare the severity of disease among patients in Intensive Care Units. These are commonly utilized in the ICU and are determined either upon admission or during the patient's stay. A number of physiological markers that have been shown to independently predict hospital death are assessed as part of the scores. Typically, Scoring Systems incorporate patient data that can be measured with ease into a statistical algorithm to provide a single score. These ratings indicate the course of a patient's disease or the way in which they will react to a therapeutic intervention. Most in critical care are related to the severity of the sickness, and some are made to forecast the outcome, which is usually death. In order to evaluate and track the results of interventions and therapies for use in research, traditional physiological Scoring Systems were first created.

OBJECTIVES OF THE STUDY

- To assess the level of Knowledge on Scoring System used in Critical Care Unit among the Nursing students of selected Colleges of Kamrup, Assam.
- To find out the association of Knowledge on Scoring System used in Critical Care Unit among Nursing students of selected Colleges of Kamrup, Assam with the selected demographic variable.

METHODS AND MATERIAL

A descriptive research design was used in the study to accomplish the objectives. By using convenience sampling technique, sample size was selected. The study was conducted among 220 Nursing students of selected Colleges, Kamrup, Assam. Respondents were selected on the basis of the inclusion criteria. Semi-structured Knowledge questionnaire was used to assess the Knowledge.

RESULTS

The findings of the study showed that out of 220 Nursing students, majority of the Nursing students i.e. 95.9% belongs to the age group 20-25 years, 4.1% belongs to the age group of 26-31 years. Majority of the Nursing students i.e. 95.5% are female, whereas 4.5% are male. Majority of the Nursing students i.e. 59.5% are from BSc. Nursing 4th year and 40.5% from Post Basic BSc. Nursing 2nd year. 100% of the Nursing students are clinically exposed in ICU. 59.5% of the Nursing students are clinically exposed in ICU for 1 year and 40.5% of the Nursing students are clinically exposed in ICU for 4 months. 100% of the Nursing students have previous Knowledge on Scoring System used in Critical Care Unit. Majority of the Nursing students i.e 59.1% of the students have heard from hospital staff, 36.4% of the students have heard from teachers and 4.5% of the students have heard from workshop regarding Scoring System used in Critical Care Unit. Majority of the students i.e. 93.6% had moderately adequate Knowledge, 4.1% of the students had inadequate Knowledge and 2.3% had adequate Knowledge regarding Scoring System used in Critical Care Unit.

The association was statistically tested for Knowledge with Fisher Exact test and analysis depicted that the demographic variable did not show statistically significant association with level of knowledge regarding Scoring System used in Critical Care Unit among Nursing students at $p<0.05$ level.

CONCLUSION

After analyzing data collected, 93.6% had moderately adequate Knowledge, 4.1% of the students had inadequate Knowledge and 2.3% had adequate Knowledge regarding Scoring System used in Critical Care Unit. Therefore, it is recommended that there should be more training programmes and awareness about the use of Scoring System in Critical Care Unit and implemented in the practice.

KEYWORDS: Knowledge, Scoring System, Critical Care Unit, Nursing students.

1. INTRODUCTION

Scoring System were developed for the quantification and standardization of the severity of acute illnesses and for the prediction of outcome and to compare the severity of disease among patients in Intensive Care Units. These are commonly utilized in the ICU and are determined either upon admission or during the patient's stay. A number of physiological markers that have been shown to independently predict hospital death are assessed as part of the scores. Typically, Scoring Systems incorporate patient data that can be measured with ease into a statistical algorithm to provide a single score. These ratings indicate the course of a patient's disease or the way in which they will react to a therapeutic intervention.

In 1981 Knaus and colleagues described APACHE, physiologically based classification system for measuring severity of illness in groups of critically ill patients. APACHE II, a simplified version, was introduced in 1985 and, has remained the most widely studied and extensive used severity-of-illness Scoring System. APACHE II was developed and validated on 5030 non-coronary artery bypass or burns patients admitted to ICUs in the USA.

It is the sum of three components:

1. An acute physiology score (APS)
2. A chronic health score based on defined premorbid states
3. A score based on the patient's age

Developed in 1995, the Wells Scoring System is the most often used clinical decision support tool for DVT diagnosis. A proven technique for determining a patient's pretest probability of getting a DVT is the Wells score. It was first investigated in patients who had a suspected case of DVT. It categorizes individuals into low, moderate, and high probability groups based on point values assigned to different clinical symptoms, including recent immobility, localized soreness, calf swelling, pitting edema, and active or recent malignancy.

A clinical measure for accurately assessing a patient's state of consciousness following a brain injury is the Glasgow Coma Scale. A person's capacity to move their body, speak, and make eye movements is taken into account while assessing them by the GCS. The visual, verbal, and motor behaviors comprise the three elements of the scale. The GCS score of an individual can vary from 3 (totally unresponsive) to 15 (responsive).

The Richmond Agitation Sedation Scale (RASS) is a tool used to evaluate critically sick patients' degree of awareness and agitated behavior. The RASS can be used for any hospitalized patient, although it is primarily utilized to patients who are mechanically ventilated. In as little as thirty to sixty seconds, the RASS can be delivered.

2. NEED OF THE STUDY

Scoring System are designed to quantify and reduce a number of discrete, but patient related variables into a single integer whose value corresponds to the severity of disease. The primary goal of Scoring Systems is to consider the features of the patient and produce a score that serves as a stand-in for treatment-independent death risk. ICU Scoring Systems are helpful tools for evaluating patient conditions objectively and assisting in the development of clinical care.

On the other hand, inaccurate application might result in incorrect scores, wasting time and money, and even worse, patient mismanagement. This article fills a critical Knowledge gap by providing critical care nurses with the knowledge necessary to accurately and effectively use severity Scoring Systems to risk stratify high-acuity patients, to evaluate the quality of ICU care, and to critically appraise research findings based on their utilization.

WORLDWIDE

Andualem H, Beyene T, Tuli W (2022) carried out a cross-sectional assessment on Knowledge and Practice of the Glasgow Coma Scale Assessment among Nurses who are indulging themselves in Adult Intensive Care Units of Federal Public Hospitals in Addis Ababa, Ethiopia. Using a validated self-administered questionnaire, 121 Adult Intensive Care Unit nurses from Ethiopian government hospitals participated in an institutional-based cross-sectional study between April 4 and April 24, 2020. According to this study, nurses in the already mentioned institute misunderstood the GCS's fundamental theoretical concepts and competencies (51.2%) and poorly applied (62%). The results of this study demonstrated that nurses' application and understanding of practice-related clinical scenarios on the GCS were lacking.

INDIA

Kumar A et al. (2017) conducted a study on Deep vein thrombosis in medical and surgical ICU patients in a Tertiary Care Centre in North India to assess the prevalence and risk factors for DVT in patients receiving DVT prevention in the medical and surgical Intensive Care Units. They selected patients over the age of 18 who were expected to stay in the ICU for more than 48 hours. Duplex ultrasonography was used to track clinical DVT symptoms during the patient's stay in the intensive care unit, and DVT prophylaxis was given according to risk.The incidence of DVT was 0.8% with prophylaxis. DVT was associated with a high APACHE IV score.

OBJECTIVES

- To assess the level of Knowledge on Scoring System used in Critical Care Unit among the Nursing students of selected Colleges, Kamrup, Assam.
- To find out the association of Knowledge on Scoring System used in Critical Care Unit among Nursing students of selected Colleges of Kamrup, Assam with the selected demographic variable.

4.METHODS AND MATERIAL

A descriptive research design was used in the study to accomplish the objectives. By using convenience sampling technique, sample size was selected. The study was conducted among 220 Nursing students of selected Colleges, Kamrup, Assam. Respondents were selected on the basis of the inclusion criteria. Semi-structured Knowledge questionnaire was used to assess the Knowledge.

5.DESCRIPTION OF TOOLS: (Appendix F)

The tool used for the study consisted of three sections which include:

Section I:- Demographic data: Socio demographic variables which include age, gender, educational level, clinical exposure in ICU and previous Knowledge on Scoring System.

Section II:- Semi Structured Knowledge questionnaire to assess the Knowledge of 4th year B.Sc Nursing students and 2nd year post basic Nursing students regarding Scoring System used in Critical Care Unit.

Scoring key

Each question had only one correct answer. For every correct response a score of '1' (one) mark and for every incorrect response a score 'O' (zero) mark was given. Hence, the maximum score on Knowledge was 30 and minimum score was 'O'.

To interpret the level of Knowledge, the scores were converted into percentage and were categorized as follows:

<50% (<15) = Inadequate Knowledge
50-75% (15-23) = Moderately adequate Knowledge
>75% (>23) = Adequate Knowledge

6.DATA COLLECTION PROCESS

The data collection was done under the following process:

1.Period of data collection:

The data collection period was scheduled between 10th September -3rd October 2024 in three selected nursing Colleges. The time schedule was 9am to 4pm.

2. Data collection process:

Data collection process refers to the identification of subjects and the precise, systematic gathering of information (data) relevant to the research purpose or the specific objectives, questions or hypothesis of the study.

Prior to the data collection, permission was obtained from the ethical committee INS trust GNRC, Dispur and head of Nursing Institute. The head of the different institute was also informed regarding the study and period of data collection. After getting permission, a brief self- introduction and the purpose of the study was explained and those who were willing to participate informed consent was taken. The samples were selected by using convenience sampling technique.

7.RESULT:

SECTION –I

Frequency and percentage distribution of Nursing students according to their demographic variables.

Table 1: Frequency and percentage distribution of demographic variables of Nursing students.

n = 220

Demographic Variables	**Frequency (f)**	**Percentage (%)**
Age in years		
20 – 25	211	95.9**%**
26 – 31	9	4.1**%**
Above 31	0	0**%**
GENDER		
Male	10	4.5%
Female	210	95.5%
Transgender	0	0**%**
EDUCATIONAL LEVEL		
B.Sc.Nursing 4th year	131	59.5%
Post Basic B.Sc.Nursing 2nd year	89	40.5%
CLINICAL EXPOSURE IN ICU	**FREQUENCY(f)**	**PERCENTAGE(%)**
Yes	220	100%
No	0	0**%**

DURATION OF CLINICAL EXPOSURE IN ICU	**FREQUENCY(f)**	**PERCENTAGE(%)**
4 months	89	40.5%
1 year	131	59.5%
HAVE YOU HEARD OF SCORING SYSTEM USED IN CRITICAL CARE UNIT	**FREQUENCY(f)**	**PERCENTAGE(%)**
Yes	220	100%
No	0	0**%**
SOURCE OF INFORMATION ON SCORING SYSTEM USED IN CRITICAL CARE UNIT	**FREQUENCY(f)**	**PERCENTAGE(%)**
Teacher	80	36.4**%**
Hospital Staff	130	59.1**%**
Workshop	10	4.5**%**

The table I shows that most of the Nursing students 211(95.9%) were aged from(20-25), 210 (95.5%) were female, 131(59.5%) were B.Sc.Nursing 4th year, 220(100%) had clinical exposurein ICU, 131 (59.5%) of the had 1year exposure, 220(100%) have heard of Scoring System used in Critical Care Unit, 130(59.1**%**) have heard of Scoring System from hospital staff.

SECTION II

Assessment of Knowledge of the Nursing students regarding Scoring System used in Critical Care Unit

Table 2: Frequency and percentage distribution of level of knowledge on scoring system used in Critical Care Unit among the Nursing students.

n=220

Level of Knowledge	Frequency	Percentage (%)
Inadequate Knowledge (<15)	9	4.1%
Moderate Knowledge(15 – 23)	206	93.6%
Adequate Knowledge (>23)	5	2.3%

It shows that, 206(93.6%) had moderate Knowledge, 9(4.1%) had inadequate Knowledge and 5(2.3%) had adequate Knowledge on Scoring System used in Critical Care Unit among the Nursing students.

SECTION III

Association of level of Knowledge on Scoring System used in Critical Care Unit with their selected demographic variables such as age, gender, educational level, clinical exposure in ICU and previous Knowledge on Scoring System

Table 3: Association of level of Knowledge on Scoring System used in Critical Care Unit among the Nursing students with their selected demographic variables.

H_{01}: There is no significant association between Knowledge regarding Scoring System used in Critical Care Unit among Nursing students in selected Colleges of Kamrup, Assam with the selected demographic variable.

H_1: There is a significant association between Knowledge regarding Scoring System used in Critical Care Unit among Nursing students in selected Colleges of Kamrup, Assam with the selected demographic variable.

n = 220

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square p-value / Fisher Exact test p-value
	f	%	f	%	f	%	
Age (in years)							p=1.000 (N.S)
20 – 25	9	4.1	197	89.5	5	2.3	
26 – 31	0	0	9	4.1	0	0	
Above 31	0	0	0	0	0	0	
Gender							p=0.073 (N.S)
Male	2	0.9	8	3.6	0	0	
Female	7	3.2	198	90.0	5	2.3	
Transgender	0	0	0	0	0	0	
Educational level							p=0.211 (N.S)
B.Sc. Nursing 4th year	8	3.6	120	54.5	3	1.4	
Post Basic B.Sc. Nursing 2nd year	1	0.5	86	39.1	2	0.9	
Clinical exposure in ICU							-
Yes	9	4.1	206	93.6	5	2.3	
No	0	0	0	0	0	0	
Have you heard of scoring system							-

Demographic Variables	Inadequate		Moderate		Adequate		Chi-Square p-value / Fisher Exact test p-value
	f	%	f	%	f	%	
used in Critical care unit							
Yes	9	4.1	206	93.6	5	2.3	
No	0	0	0	0	0	0	

N.S – Not Significant, p>0.05

INTERPRETATION

The table 3 shows the level of Knowledge on Scoring System used in Critical Care Unit among the Nursing students with their selected demographic variables.

It was found that the demographic variables did not show statistically significant association with level of Knowledge on Scoring System used in Critical Care Unit among the Nursing students with their selected demographic variables at $p<0.05$ level. Thus, the research hypothesis (H_1) is rejected and null hypothesis (H_{01}) is accepted.

AGE: The Table shows that the obtained Fisher exact p-value was p = 1.000 since p value is greater than 0.05, there was no association between level of Knowledge and age of the respondents.
GENDER: The table shows that the obtained Fisher exact p-value was p = 0.073 since p value is greater than 0.05, there was no association between level of Knowledge and gender of the respondents.
EDUCATIONAL LEVEL: The table shows that the obtained Fisher exact p-value was p = 0.211 since p value is greater than 0.05, there was no association between level of Knowledge and educational level of the respondents.

CONCLUSION

A descriptive study was conducted to assess the Knowledge on Scoring System used in Critical Care Unit among Nursing students of selected colleges of Kamrup,Assam.

The findings of the study showed that out of 220 Nursing students, majority of the students i.e 93.6% had moderately adequate Knowledge, 4.1% of the students had inadequate Knowledge and 2.3% had adequate Knowledge on Scoring System used in Critical Care Unit.

The association was statistically tested for Knowledge for Fisher Exact test and analysis depicted that the demographic variable did not show statistically significant association with level of Knowledge on Scoring System used in Critical Care Unit among Nursing students at $p<0.05$ level.

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