DOI: https://doi.org/10.53350/pjmhs22161131

ORIGINAL ARTICLE

Knowledge & Practice of GCS among Nurses Working at ICU: Cross Sectional Study

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ABSTRACT

Background: The Glasgow Coma Scale (GCS) is a standard check list, to implement in clinical valuation awareness is examined by a set of actions known as neuropsychological assessment.
Aim: To assess the Knowledge and practice of nurses about GCS working in ICUs.
Study design: Descriptive Cross sectional study.
Methodology: Study population included 150 nurses working in ICU of 02 public sector hospitals, Lahore General Hospital and Services Hospital of Lahore. Nurse's knowledge was evaluated by using an adapted modified self-administered questionnaire and their practices were evaluated by direct observation through a checklist. ICUs nurses study participants based on inclusion criteria. Data was analyzed by SPSS software, version 26 as qualitative variables were expressed as frequencies %ages
Results: The results clarify that highest percentage 52.7% of participant's age is between 26-30years, 56**.7%** respond correctly about the specific sections of scale**,** 42% responds correctly to the lowest score. 66.7% nurses correct answered to the initial devise to assess the level of consciousness. However 86.7% nurses have adequate level of knowledge that it is used to assess the traumatic brain injury.
Conclusion: We concluded that participants are having adequate level of knowledge and performance in evaluating level of conscious in ICU patients. Hence, health care settings are required to provide GCS charts and protocols for patient's safety and better outcome.
Keywords: Assessment, Glasgow Coma Scale (GCS), Knowledge and Practice.

INTRODUCTION

Glasgow Coma scale is a tool to evaluate the consciousness level, which measures the "complexity and extent of compromised awareness." The GCS demands to score its applications in an extensive range of solid conditions. The Glasgow Coma Scale (GCS) is a worldwide clinical means of measuring the level of compromised consciousness. Its simplicity was the standard concern with the aim to offer a technique to measure and transfer trustworthy evidence about the level of consciousness. This GCS scoring system is a vital tool for decision-making and triage and its early score act as a prominent measure for action especially after traumatic brain injury[1].

Nursing is a dynamic profession which is evolving with the advancement of health care in this dynamic world. With setting such high standards, a scientific rational based knowledge is required to maintain the accountability of this profession**.** Nurses require a huge amount of knowledge and practical implementation to fulfill the demanding care needs of their patients[2]**.** Continuous assessment of patients is the primary responsibility of nurses where they may face lots of challenges. One such challenge while assessing the patients is assessing the neurological functions and dysfunctions, typically when the patients are in coma[3]. To assess such comatose patients there is need of comprehensive neurological assessment and evaluation which comprises of history given by an eyewitness, patients' neurological examination and to properly interpret laboratory findings and neuroimaging etc[4]**.**

Worldwide Death from brain trauma is the highest among all deaths. An estimated 1.5 million people are dying from traumatic brain injuries, and the millions survivors need emergency treatment[5]**.** Assessing the state of consciousness is the first step in neurological examination in a clinical setting, and it is well known that this is a very important evaluation measure. It is believed that quick and accurate neurological assessment will minimize trauma complications, burden of unnecessary diagnostic procedures and ultimately will decrease morbidity and mortality[1]. Any kind of effective assessment requires and objectively measurable, accurate and reliable measuring tool.

Glasgow Coma scale is one such valid, accurate, objective and reliable tool for neurological assessment which gives precious information, describe the patients' level of consciousness on every stage of assessment such as initial, ongoing and final assessment[6]**.** The valuable findings from the neurological assessment are found and entered into an objective practical scale for effective communication among doctors, nurses and other health care workers. More precisely, the Glasgow Coma Scale is a basic device to record the patient's state of consciousness, which is used to grade the patients over time to indicate any changes in patients' clinical conditions[7]**.**

It is the basic role and responsibility of those doctors and nurses who are taking care for neurological and neurosurgical patients to assess and document the consciousness level of their patients. They assess patients on a certain criteria of objective scale. The resulting score from that scale is between 3 and 15. Score 3 means deep unconsciousness and 15 means the highly alert level of patients[8]**.**

Now-a-days a cultured and well-informed nurse is that person who encounters in current health care delivery system. Nurses can take an exceptional chance to help patients and observe the prognosis. They identify risks and possible areas for modification. They provide guidance on the adapted plan and simplify their aims achievement. That can't be completed without a well-informed methodically familiar nurses, particularly in serious situations. Meanwhile, they must have effective assessment and evaluation skills in order to deal with and manage their patients, especially those who have a low degree of understanding about the usage of G.C.S[9]**.**

The Glasgow Coma Scale assesses visual, motor, and verbal responses to stimuli from three kinds. Every reaction or shortage thereof - by the patient is recorded. Each type of score is accumulated and counted as the patient's score. Each type of score is accumulated and counted as the patient's score[10]**.** Although nurses receive training during study and in the job. We are attentive to studies proposing that the working knowledge in the use of the GCS among nurses who are practicing at the bedside might not be adequate[11].

Received on 15-07-2021
Accepted on 25-12-2021

Hence nurses play a vital role in the primary recognition of any change in a patient's neurological status. Nurses face the problems of faster diagnosis of acute diseases such as head injury, acute infections, haemorrhage, and complications after surgery, as well as monitoring neurological fluctuations, during neurological assessments[12]. For nursing staff and especially the critical care nurses it is very important that they should be very knowledgeable and competent in monitoring and observation of neurological assessment. They are supposed to have enough clinical skills only then they can assure patients' safety and security[12]. Nurses need to have efficient assessment skills and knowledge so that they can use proper Glasgow Coma scale to manage their patients with low conscious level.

The objective of the study was to assess the Knowledge and practice of nurses about GCS working in ICUs.

METHODOLOGY

Informed written consent was taken from all the participants prior to participating in this research. After permission from IRB study population included 150 nurses working in ICU of 02 public sector hospitals, Lahore General Hospital and Services Hospital of Lahore. A self-administered Questionnaire was used to collect data. The questionnaire is adopted from a previous study "Assessing Nurses Knowledge of Glasgow Coma Scale in Emergency and Outpatient Department". It is divided into two parts. In Part A there are 4 questions related to demographic data addressing age, level of education, gender, and years of service. Part B consists of 15multiple choice questions related to knowledge and part C is an observational check list to assess the practice of Glasgow Coma Scale (GCS) among nurses. It was modified by reviewing the extensive literature consulting with subject experts and ethical review committee. Content validity checked by adapted modified questioners given to the two experts in the field of study to evaluate.

Statistical Analysis: After the data collection, it was entered into SPSS version 26.0. For qualitative factors, the data is provided as percentages and frequencies. Fisher's exact test was used to determine the association of knowledge level with age, level of education and working experience. A p-value ≤ 0.05 will be considered as significant.

RESULTS

In this study, 150 nurses with mixed socioeconomic statuses from Lahore participated as shown in table-1.

According to table-2, 70.7 % of the study participants had poor knowledge of the Glasgow coma scale, 26% of the nurses had average knowledge of the GCS, and only 3.35% of the nurses had strong knowledge of the GCS, indicating a very substantial lack of knowledge of the GCS. This conclusion raises questions about how important knowledge and ability are in determining GCS.

Table-3 showed significant difference as nurses having BSN degree, advance diploma and any other qualification had poor knowledge as compared to nursing having diploma in nursing.

Significant difference was observed. Nurses having < 2 years, 3–5 years and >10 year experience had poor knowledge as compared to nursing having 6 to 10 years of experience as shown in table-4.

Table-1: Demographic Data

VARIABLE	Frequency	%age
Gender		
Male	00	00%
Female	150	100%
Age		
21-25 YEARS	19	12.7%
26-30 YEARS	79	52.7%
31-35 YEARS	47	31.3%
ABOVE 35 YEARS	5	3.3%
Qualification		
GENERAL NURSING	48	32%
ADVANCED DIPLOMA	59	39.3%
BSN/POST RN BSN	38	25.3%
OTHERS	5	3.3%
Experience		
1-2 YEARS	43	28.7%
3-5 YEARS	65	43.3%
6-10 YEARS	32	21.3%
ABOVE 10 YEARS	10	6.7%
FORMAL TRAINING ON GCS AT THE JOB		
NO	64	42.7%
LESS THAN ONE YEAR AGO	22	14.3%
LESS THAN ONE YEAR AGO	49	32.7%
YES MORE THAN 6 MONTHS AGO	15	10%

Table-2: Overall Knowledge Status of Nurses about the Glasgow Coma scale

Questionnaire	Frequency	%age
Poor Knowledge (Less than 10 correct responses /18)	106	70.7
Average Knowledge (10-13 correct/18)	39	26.0
Good Knowledge (above 13 correct responses/18)	5	3.3
Total	150	100.0

Table-3: Association of Knowledge Level with Level of Education

Cross-table			Overall Knowledge of Nurses about GCS: Poor Knowledge (Less than 10 correct responses /18)	Average Knowledge (10-13 correct/18)	Good Knowledge (above 13 correct responses/18)	Total
Level of education	Diploma in nursing	Count	21	26	1	48
		% within Level_education	43.8%	54.2%	2.1%	100.0%
	Advance diploma	Count	44	11	4	59
		% within Level_education	74.6%	18.6%	6.8%	100.0%
	BSN	Count	37	1	0	38
		% within Level_education	97.4%	2.6%	0.0%	100.0%
	Any other	Count	4	1	0	5
		% within Level_education	80.0%	20.0%	0.0%	100.0%
Total		Count	106	39	5	150
		% within Level_education	70.7%	26.0%	3.3%	100.0%

P value 0.001, *Statistically Significant

Table-4: Association of knowledge level with working experience

Crosstab			Overall Knowledge of Nurses about GCS: Poor Knowledge (Less than 10 correct responses /18)	Average Knowledge (10-13 correct/18)	Good Knowledge (above 13 correct responses/18)	Total
Length of service	Less than 1-2 years	Count	33	7	3	43
		% within Length of service	76.7%	16.3%	7.0%	100.0%
	3-5 Years	Count	48	17	0	65
		% within Length of service	73.8%	26.2%	0.0%	100.0%
	6-10Years	Count	15	15	2	32
		% within Length of service	46.9%	46.9%	6.3%	100.0%
	More than 10 years	Count	10	0	0	10
		% within Length of service	100.0%	0.0%	0.0%	100.0%
Total		Count	106	39	5	150
		% within Length of service	70.7%	26.0%	3.3%	100.0%

P value 0.002* *Statistially significant

DISCUSSION

In this study 150 only female nurses from the tertiary care hospital have participated. All participant were working in the different units at the General Hospital Lahore and the Services Hospital Lahore. In another study, they conducted their study in the adult intensive care unit at a teaching facility[13]. In this study findings showed that all participants have received education about Glasgow Coma Scale in basic diploma program. In another study reported that it is used for level of consciousness[13].

Most of nurses' participants 52.70% of my study from 26-30 years age group. In Pakistan nurses complete their four years training education at the age of 20-21 years. Age of the participants should be within 24-25 years. In another study, there mean aged is 31.18 years[14]. All 100% participants of my study had basic diploma program. In another study, their participants had post-graduate course[14].

Nurses included in this study who have varies in the length of service in nursing profession but most of them were within 3-5 years (43.3%), they also had participants with different length of service in nursing profession[13]. All participants had received formal training on Glasgow Coma Scale, and majority of participants had received in-service training program more than one year ago with 32.70%. In our study, on inquiring about the knowledge of Glasgow Coma Scale which is comprises on the many other components such as In my study only 3.3% participants have good knowledge of Glasgow Coma Scale, 26% have average while 70.7% had poor knowledge. In one previous study, 99.2% participants reported that it is used to monitor the consciousness level. There is a big difference in mine and their study out come[15].

In my study only 38.7% nurses were able to respond the right option that note taking helps to score each indicator, to calculate total score and nurse can describe when needed. According to improving life after brain injury (2018) a coma scale chart should be used to record a patient's Glasgow Coma Score (GCS). This enables the improvement or worsening of a patient's condition to be communicated swiftly and effectively. Individual aspects, as well as the total score, are critical.

Although some receptors can detect a variety of stimuli, they are mainly focused on detecting one sort of stimulus: Photoreceptors in the eye, sound - vibration receptors in the ears, and touch, pressure, and pain receptors in the skin all feel touch, pressure, pain, and temperature, skin receptors for taste and smell; chemical sensors in the tongue and nose, as well as body position; ear receptors. Changes in the environment need all living creatures to respond. Despite the fact that this occurs in a variety of ways, the sequence of occurrences is always the same: 86.7% nurses of my study stated that a tool Glasgow Coma Scale is devised and used for the assessment of verbal, motor and eye opening response of all patients who needs to be cared in the intensive care units.

Limitations: The study has few limitations as well. First the questionnaire needs time to fill however, during working hours the hustle of patients in clinics could intervene the results.

CONCLUSION

We concluded that although level of knowledge is poor but nurse's performance was good in practicing the Glasgow Coma Scale. It was also observed that the standardized guideline for nurses working in the ICU were available. Therefore, inconsistency between knowledge and practice still exists among nurses working in ICU. Hence, the need was felt for the specific training, tutorials and workshops to evaluate the patients. The role of in-service education has become very important in recent years.

Authors' Contribution: NK&AI: Conceptualized the study, analyzed the data, and formulated the initial draft, **ZNG&AJL:** Contributed to the histomorphological evaluation, **SA,NA&WL:** Contributed to the analysis of data and proofread the draft,

Conflict of Interest: None to declare

Financial Disclosure: None

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