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Nurses knowledge about Glasgow come scale in AL-Sader medical city

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Abstract
Objective: this study aimed to determine nurses' knowledge about the Glasgow Coma Scale (GCS) and to determine the association between nurses' knowledge and their demographic data, such as educational level and years of experience.
Methodology: The current study adopts a descriptive cross-sectional approach to meet its initial goals. The research was conducted in the city of Al Najaf from May 8 until July 28, 2021. Instrument of the study consist of two parts: There were 10 items on the Demographic Information Sheet. Additionally, nurses' knowledge of the Glasgow Coma Scale Sheet, which had 21 elements, the study includes a non-probability (accidental) sample of 80 nurses who work in the intensive care, emergency, and neurosurgery units of Al-Sadr Medical Hospital.
Results: The results of this study show that psychological components are rated moderately overall. Additionally, there is a non-significant correlation ($p>0.05$) between the demographic information and the total assessment of psychological aspects.
Conclusion: The study concluded that all nurses' knowledge of the Glasgow Coma Scale (G.C.S.) was nearly insufficient.
Recommendation: The study recommends that nurses receive educational booklets in addition to participating in educational programs.

Keywords: Nurses, knowledge, Glasgow come scale

Introduction

The globally recognized assessment device used to assess consciousness is known as the Glasgow Coma Scale (GCS) (Sedain and Bhusal, 2019) [12].

The Glasgow Coma Scale is the primary instrument used by nursing and medical professionals to evaluate patients' neurological conditions. Eye opening, verbal response, and best motor reaction are the three different areas of neurological functioning that are used to assess the level of awareness. Each category is further broken down and given a score. This scale has been hailed as the most accurate indicator of the general brain dysfunction brought on by traumatic brain injury. (Ehwarieme, *et al*., 2021) [5]. The instrument is a dependable clinical approach for determining the degree of a neurological lesion (Mattar, *et al*., 2015) [10].

The GCS evaluates three specific neurological functions: eye-opening, verbal response, and motor responsiveness (all of which indicate inappropriate early signs of neurological deterioration). This scale can assist healthcare professionals (HCPs) who work in emergency and critical care units in particular to quickly execute accurate diagnostic assessments and commence proper nursing treatments for patients (Mattar *et al*., 2013) [9]. Nurses perform an active and vital role in healthcare environments. A nurse is frequently the first person a patient encounters (Cruz *et al*., 2018) [3].

The preparation of appropriate nursing interventions and nursing assessments is the responsibility of nurses. Therefore, nurses should have the clinical expertise required to offer excellent patient care, be proficient in assessing neurological abnormalities, and be ready to do so (Mattar *et al*., 2015) [10]. A component of providing high-quality healthcare is keeping patients safe, and nurses are essential in ensuring that patients get the best treatment available (Ehwarieme & Anarado, 2016) [4].

The majority of nurses base their scores on their own comprehension of the GCS (Jadduoa, *et al*., 2013) [7].

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However, several studies have shown that nurses lack sufficient understanding of the use of this scale, highlighting the need to properly define and standardize the GCS within nursing school and continuing training programs. Despite the fact that a lot of research has been done on how to get nurses to utilize the GCS and how to increase nurses' GCS knowledge (Mattar *et al*., 2013) [9].

Objectives of the study

The purpose of this study was to measure nurses' knowledge of the Glasgow Coma Scale (GCS) and investigate the association between nurse knowledge and demographic parameters such as educational level and years of experience.

Methodology

The current study adopts a descriptive cross-sectional approach to meet its initial goals. Between May 8 and July 28 of 2021, the study was in progress. The study used a non-probability (accidental) sample of 80 nurses employed at Al-Sadr Medical Hospital in the intensive care, emergency, and neurosurgery sections. In order to fulfill the earliest mentioned objectives, the researcher adopts and develops an assessment tool. There are two components to the questionnaire: Part I was a demographic information sheet with 10 elements. Part II. Glasgow Coma Scale sheet, there were 21 items on the sheet.

Data collection was accomplished through an individual interview done by researchers with nurses working at Al-Sadr Medical Hospital, as well as the distribution of questionnaire forms in various units. The data collection period was from May 15th, 2021, to May 28th, 2021. Each person receives roughly 20-25 minutes of interview time.

Inferential data analysis

A statistical strategy that involves descriptive data like frequencies and percentages as well as inferential statistics like Chi Square, standard deviation, and mean score is utilized.

Results

Table 1: Descriptive statistics (frequency and percentage) for nursing demographics

Demographic data	Sub-groups	Frequency (N=80)	Percentage
Age / years	18-27	40	50.0
	28-37	27	33.8
	38-47	13	16.3
Gender	Male	42	52.5
	Female	38	47.5
Work Ward	ICU	23	28.8
	Emergency	30	37.5
	Neuro	27	33.8
Educational Status	Secondary nursing school	9	11.3
	Institute of Nursing	31	38.8
	College of Nursing	38	47.5
	Postgraduate	2	2.5
Training about Glasgow coma scale	Yes	65	81.3
	No	15	18.8
No. of Training Courses	0	62	77.5
	1	4	5.0
	2	10	12.5
	4	3	3.8
	4	1	1.3
Years of Experience	1-8	54	67.5
	9-16	18	22.5
	17-24	8	10.0
Years of the current ward	1-8	69	86.3
	9-16	10	12.5
	17-24	1	1.3
Did you work with Glasgow coma scale	Yes	38	47.5
	No	42	52.5
Did you encourage training about Glasgow coma scale	Yes	10	12.5
	No	70	87.5

Table 1 shows that the majority of the study subgroups are: male nurses (52.5%); those with ages ranging between 18 and 27 years (50%); those who work in emergency wards (37.5%); those who are college graduates (47.5%); those who have no training courses about the Glasgow coma scale (81.3%); those who have two training courses (12.5%); and those with 1 to 8 years of experience.

Table 2: Assessment of nurses' knowledge of the Glasgow Coma Scale

N	Items		Freq.	%	MS	SD	Assessment
1	What is the function of the Glasgow Coma scale?	Incorrect	18	22.5	0.78	0.42	Good
		Correct	62	77.5			
2	What are the specific parts of the Glasgow Coma scale?	Incorrect	46	57.5	0.43	0.50	Moderate
		Correct	34	42.5			
3	Vital signs are a component of the Glasgow Coma scale?	Incorrect	43	53.8	0.46	0.50	Moderate
		Correct	37	46.3			
4	The Glasgow Coma Scale was designed to measure memory for patients who have suffered a blow to the head?	Incorrect	42	52.5	0.48	0.50	Moderate
		Correct	38	47.5			
5	Can this scale be used to diagnose the cause of a person's decreased consciousness or coma?	Incorrect	63	78.8	0.21	0.41	Poor
		Correct	17	21.3			
6	The Glasgow Coma scale is used for children under three years old?	Incorrect	66	82.5	0.18	0.38	Poor
		Correct	14	17.5			
7	The application of the Clasco Coma scale guides the work of all educational levels for nurses working in intensive care units?	Incorrect	37	46.3	0.54	0.50	Moderate
		Correct	43	53.8			
8	The highest score on the Glasgow Coma scale is	Incorrect	38	47.5	0.53	0.50	Moderate
		Correct	42	52.5			
9	The lowest score on the Glasgow Coma scale	Incorrect	45	56.3	0.44	0.50	Moderate
		Correct	35	43.8			
10	Patients in coma have a Glasgow Coma scale	Incorrect	70	87.5	0.13	0.33	Poor
		Correct	10	12.5			
11	The clasco coma score indicates the critical situation and the examiner should be alert for the following:	Incorrect	61	76.3	0.24	0.43	Poor
		Correct	19	23.8			
12	The interval of the Glasgow scale indicating moderate severity is between:	Incorrect	63	78.8	0.21	0.41	Poor
		Correct	17	21.3			
13	To assess eye opening, the examiner should begin with:	Incorrect	33	41.3	0.59	0.50	Moderate
		Correct	47	58.8			
14	What part of the brain is evaluated when the eye is opened?	Incorrect	62	77.5	0.23	0.42	Poor
		Correct	18	22.5			
15	To assess the best verbal response, the examiner should start with:	Incorrect	23	28.8	0.71	0.46	Good
		Correct	57	71.3			
16	What part of the brain is evaluated in a verbal response?	Incorrect	70	87.5	0.13	0.33	Poor
		Correct	10	12.5			
17	To assess the best motor response, the examiner should begin with:	Incorrect	60	75.0	0.25	0.44	Poor
		Correct	20	25.0			
18	What part of the brain is evaluated for a motor response?	Incorrect	59	73.8	0.26	0.44	Poor
		Correct	21	26.3			
19	When assessing (a traffic accident). A patient who has bulging eyes. When she asks him to open his eyes but he is unable to. The eye's response is	Incorrect	73	91.3	0.09	0.28	Poor
		Correct	7	8.8			
20	When evaluating the patient, you should:	Incorrect	59	73.8	0.26	0.44	Poor
		Correct	21	26.3			
21	In the Glasgow scale, take notes for:	Incorrect	33	41.3	0.59	0.50	Moderate
		Correct	47	58.8			
	Overall Knowledge Assessment				0.37	0.44	Moderate

MS: Mean of Scores; SD: Standard Deviation; Poor: MS = 0-0.33; Moderate: MS =0.34-0.66; Good: MS≥0.67

This table demonstrates that the majority of nurses had an inadequate understanding of the Glasgow coma scale, with the exception of items 2, 3, 47, 8, 913, and 21, where the assessment of knowledge is moderate, and item 1, 15, where the assessment of knowledge is good. Knowledge of the Glasgow Coma Scale is rated as "moderate."

Table 3: Overall nurses' knowledge according to the Glasgow Coma Scale

Nurses' subgroups	Poor	Moderate	Good
Frequency	39	38	3
Percentage	48.8	47.5	3.8

Table (3) shows the percentages of nurses' subgroups based on their overall knowledge assessment of the Glasgow Coma Scale; approximately 48.8% of nurses have poor knowledge, 47.5% have moderate knowledge, and 3.8% have good knowledge (Figure 1).
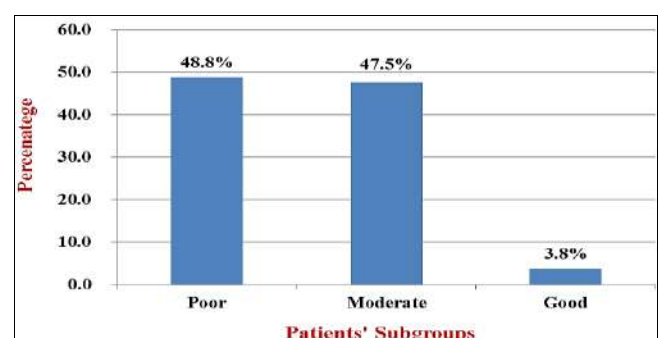
Fig 1: Nurses' subgroups according to their knowledge assessment about the Glasgow Coma Scale

Table 4: There is a correlation between the overall assessment of nurses' knowledge of the Glasgow Coma Scale and demographic variables.

Demographic data	Chi Square	df	P value	Sig.
Age / years	12.22	4	0.001	HS
Gender	0.88	2	0.67	NS
Work Ward	3.11	4	0.13	NS
Educational Status	6.23	6	0.03	S
Training about Glasgow coma scale	11.87	2	0.002	HS
No. of Training Courses	0.77	8	0.67	NS
Years of Experience	15.23	4	0.000	HS
Years of the current ward	1.10	4	0.26	NS
Did you work with Glasgow coma scale	11.21	2	0.002	HS
Did you encourage training about Glasgow coma scale	5.21	2	0.05	S

df= degree of freedom; NS: Non-significant at P value >0.05; S: Significant at P value <0.05; HS: High Significant at P value <0.01

There is a non-significant correlation ($p>0.05$) between the overall assessment of nurses' knowledge regarding the Glasgow coma scale and their demographic characteristics, except for age, level of education, years of experience, and did you work with the Glasgow coma scale, and did you encourage training about the Glasgow coma scale, in which there was a significant association ($p<0.05$) with nurses' knowledge regarding the Glasgow Coma Scale.

Discussion
This chapter represents a thoroughly arranged analysis and rationally resulting discussion of the tables and figures in the results supported with related available literatures and studies.

Discussion of demographic data of nurses
The results of table 1 show that more of the patients in age group to the study sample were within (18-27) years. This study agrees with (Kaur *et al*., 2016) [8] that the age group was between 41–60 years old.
Also, the table shows that more of participants were Male (52.5%). This study disagrees with (Ehwarieme & Anarado, 2016) [4] the majority (67.8%) of the respondents were females.
In regarding to the Work Ward, the results show that more of study sample works in Emergency ward, and almost half of them in College of Nursing (47.5%). This study agrees with (Santos *et al*., 2016) [11] the most nurses' respondents from emergency unit (89.3%) and are bachelor's degree. (74.1%)
Many of them did not receive any training about Glasgow coma scale (81.3%). This study agrees with (Sedain & Bhusal, 2019) [12] that (57.8%) of nurses did not receive any education in working place about Glasgow Coma scale.
Much of the nurses involved in this study their years of experience between (1-8), and years of the current ward between (1-8) years (86.3%). This study agrees with (Wawaz *et al*., 2020) [14] that (52.7%) were having 7-14 years of experience and (44.7%) participants were having 1-6 years of experience in current ward.
As well as more than a half do not work with Glasgow coma scale (52.5%). This study agrees with (Campanharo *et al*., 2016) [2] accept the percentage of nurses that work with Glasgow coma scale was. (73.2%)
Finally, most of them do not encourage training about Glasgow coma scale (87.5%). This study completely disagrees with (Ehwarieme & Anarado, 2016) [4] that 100% of nurses encourage future courses about Glasgow coma scale.

Discussion scores of nurses' knowledge about Glasgow coma scale
The assessment of nurse's knowledge about the following was low: use of Glasgow Coma scale to diagnose the cause of a person's decreased consciousness or coma. And use of GCS for children under three years old. This result disagrees with (Ehwariemea *et al*., 2021) [5] that 74.1% of nurses had good knowledge about use of GSC for children and not uses to diagnose causes of decreased consciousness or coma.
Also, the assessment of nurse's knowledge about the following was low: score of GCS for patients in coma, GCS that indicates a critical situation GCS indicating moderate severity. This study disagrees with (Santos *et al*., 2016) [11] that the majority of nurses (more than 80%) answered correctly questions about GCS concerning the score and their indicated about critical situation for the patient.
Regarding the part of the brain that evaluated when the eye is opened nurse's knowledge was low. This result agrees with (Ehwarieme *et al*., 2021) [5] that only (40.1%) answered correctly.
The nursing knowledge about part of the brain that evaluated in a verbal response and motor response was low. This result agrees with (Wawaz *et al*., 2020) [14] that 33.3% of nurses correct answered about part of the brain in assessing verbal and motor response. The nursing knowledge about traffic accident GCS score and evaluating the patient by: (Watch, move, feel, evaluate) was low. This disagrees with (Alhassan *et al*., 2019) [1] that nurses had good knowledge about car accident GCS scores and how to evaluate.
The assessment of knowledge of nurses toward the "specific parts of the GCS" was moderate. This disagrees with (Hien & Chae, 2011) [6] that 97.9% of nurses answered correctly about GCS components. Also, the assessment of knowledge of nurses toward Vital signs are not a component of the Glasgow Coma scale was moderate. This agrees (Singh *et al*, 2016) [13] that only 54.8% of the participants knew that vital signs are not a component of the Glasgow Coma Scale.
The assessment of knowledge of nurses toward GCS is designed to measure memory for patients who have suffered a hit in the head was moderate. This study agrees with (Jaddoua *et al*., 2013) [7] that 63% of participators answered correctly about (GCS) mainly to measure the level of memory in patients with head injuries.
The assessment of knowledge of nurses toward the highest and lowest score on the GCS was moderate. This study disagrees with (Ehwarieme & Anarado, 2016) [4] 97% knew the lowest and the highest scores.
The assessment of nurse`s knowledge about how to assess

eye opening was moderate. This result agrees with (Hien & Chae, 2011) [6] that 68.1% of nurses knew how to assess eye opening. Nurse`s knowledge about "In the GCS, take notes in order to score each indicator, the overall score, and a description where necessary" was moderate. This agrees with (Santos *et al*., 2016) [11] that their knowledge was moderate about how to score each indicator in GCS.

The assessment of knowledge of nurses toward the following was good: the function of the Glasgow Coma scale and assess the verbal response". This agrees with (Singh *et al*., 2016) [13] that 88% of nurses had good knowledge about function of GCS including verbal response.

Discussion Overall Knowledge Assessment
Our study shows that about 48.8% of the nurses had poor knowledge, 47.5% had moderate knowledge, and only 3.8% had good knowledge. This disagrees with the finding (Sedain & Bhusal, 2019) [12] that 33.1% of the nurses had a good level of knowledge, 51.3% had moderate knowledge, and 15.6% had poor knowledge.

Discussion of the correlations between the overall assessment of nurses' knowledge regarding the Glasgow Coma Scale and their demographic data. It shows that there is a non-significant correlation ($p>0.05$) between the overall assessment of nurses' knowledge regarding the Glasgow coma scale and the gender, work ward, number of training courses, and years on the current ward. This result agrees with Alhassan *et al*. (2019) [1]. There was no significant association between the nurses' knowledge regarding GCS and any of their demographic data.

There was a significant correlation ($p<0.05$) with nurses' knowledge concerning the Glasgow coma scale for age, educational level, years of experience, "did you work with the Glasgow coma scale," and "did you encourage training about the Glasgow coma scale." This is supported by Iraqi research (Jaddoua *et al*., 2013) [7].

Conclusions and Recommendations
According to study finding and discussion, the study concluded that:
1. The majority of low back pain in female with age (18-27) years old *.*
2. Most of study sample is Male.
3. Most common of study sample is work in emergency department.
4. According to the findings of the study, all nurses' understanding of the Glasgow Coma Scale (G.C.S.) was almost insufficient.

Recommendations
1. According to the study's findings, the following recommendations are made:
2. The significance of using nursing colleges in neurological wards.
   A brochure should be designated and provided to all nurses working in neurological wards, outlining the guidelines and standards that must be implemented and followed in neurological wards.
3. A training program for nurses working in the neurological ward should be developed in order to improve their knowledge of the use of GCS.

Conflict of Interest
Not available

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Not available

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