Assessment Of Nurse's Knowledge Concerning Glasgow Coma Scale In Neuro Surgical Wards

تقييم معارف الممرضين بخصوص مقياس كلاسكو للغيبوبة في ردهات الجراحة العصبية

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الخلاصة:
الهدف: تهدف الدراسة الى تقييم معارف الممرضين المتعلقة بمقياس كلاسكو وايجاد العلاقة بين معارف الممرضين وصفاتهم الديموغرافية المتضمنة المستوى التعليمي وسنوات الخبرة.
المنهجية: أجريت دراسة وصفية في ثلاثة مستشفيات (مستشفى الشهيد غازي الحريري للجراحات التخصصية ، مستشفى العلوم العصبية، مستشفى جراحة الجملة العصبية) من الاول كانون الثاني 2011 الى نهاية شهر نيسان 2012 .أختيرت عينة غير احتمالية (غرضية) من (100) ممرض وحسب معايير خاصة بهم. حيث استعملت أستبانة تتكون من (25) فقرة. تم فحص صدق المحتوى للاستمارة الاستبانة من قبل (4) من الخبراء الاختصاص وتم أستخدم اسلوب الاختبار واعادة الاختبار لتحديد ثبات الاستبانة وكانت النتيجة (0.83) ، تم جمع المعلومات باسلوب تقنية المحادثة واستخدم الإحصاء الوصفي والاستدلالي في تحليل البيانات بواسطة برنامج الحزمة الاحصائية للعلوم الاجتماعية الاصدار العاشر.
النتائج: أشارت نتائج الدراسة الى ان جميع الفقرات والبالغة (25) فقرة ذات العلاقة بمعلومات الممرضين حول مقياس كلاسكو كانت ضعيفة وغير كافية.
الاستنتاج: نستنتج من نتائج الدراسة الى ان الممرضين يمتلكون معلومات غيركافية عن مقياس كلاسكو .
التوصيات: أوصت الدراسة أنه من الأهمية بمكان توظيف الممرضات الأكثر تأهيلا ودراية مع معايير عالية في الكفاءات لتطبيق التقييم العصبي ولا سيما مقياس كلاسكو في ردهات الجراحة العصبية.

Abstract:
Objective: The study aims to assess nurse's knowledge concerning Glasgow Coma Scale (GCS) and to find out the relationship between nurses' knowledge and their demographical characteristics include educational level and years of experiences.
Methodology: A descriptive study was carried out at three hospitals (Al-Shaheed Gahzee Al-Harery for surgical specialties hospital, Neuro Science hospital and Neuro surgical hospital), Starting from 1st Jan. 2011 to the end of April 2011. Non-probability (purposive) samples of 100 nurses were selected according to special criteria. The finalized questionnaire contained (25) items. The content validity of the instrument was established through penal of (4) experts. Test retest reliability of the item scale was determined as average of (r=0.83).Data was gathered by interview technique and data was analyzed by application of descriptive and inferential statistical methods by SPSS version 10.
Results: The results indicated that all items which consist from (25) items related knowledge's nurses concerning Glasgow coma scale was inadequate.
Conclusion: We conclude from the results of the study that nurses have inadequate knowledge about the Glasgow coma scale.
Recommendations: The Study recommended that it is crucial need to education the nurse and to employ more qualified and knowledgeable nurses with high standards oriented competencies to apply through neurological assessment particularly Glasgow coma scale in neuro surgical wards.
Keywords: Glasgow coma scale, Neurological assessment, Neuro-Surgical

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INTRODUCTION:

Glasgow Coma Scale (GCS) is a neurological scale which aims to give a reliable, objective way of recording the conscious state of a person, for initial as well as subsequent assessment. A patient is assessed against the criteria of the scale, and the resulting points give a patient score between 3 (indicating deep unconsciousness) and either 14 (original scale) or 15 (the more widely used modified or revised scale) [(1)]. The level of consciousness should be the first thing assessed during a neurological examination because the information obtained can be used to modify the remainder of the examination if necessary. The GCS is based on simple and clearly defined parameters of patient

responses that provide for consistent assessment data. It is used to potential for rapid deterioration in consciousness [(2)]. The GCS evaluate patients who have assesses three parameters of consciousness: eye opening, verbal response, and motor response [(2)]. It is used to assess level of consciousness in wide variety of clinical setting, particularly for patient with head injury [(3)]. Glasgow Coma Scale is most commonly used neurological assessment in clinical care if the patient is in coma [(4)]. A competent nurse in a globalized world, which increasingly demands the professional to be capable of autonomous thought and critical thinking, creative, educated, and knowledgeable is one of the major challenges in nowadays health care systems [(5)]. Nurses have a unique opportunity to help clients examine their lifestyle, recognize risks and potential areas for change, advice on a focused individualized plan and facilitate the accomplishment of their goals [(6)]. That can't be done without a well-qualified thoroughly knowledgeable nurses, especially in critical care setting as in the sample of our study(neuroscience nurses),since they ought to have efficient assessment and evaluation skills to deal and manage their patient particularly those with disturbed level of consciousness through the application of G.C.S [(3)].

Objectives:

1. To assess nurse's knowledge concerning Glasgow Coma Scale (GCS).
2. To find out the relationship between nurses' knowledge and their demographical characteristics include educational level and years of experiences.

METHODOLOGY:

Design of the study: A descriptive approach is carried out to achieve the purpose of the study.

Setting of the study: The study is conducted at three hospitals (Al-Shaheed Gahzee Al-Harery for surgical specialties hospital, Neuro Science hospital, and Neuro surgical hospital).

Sample of the study: A non-probability (purposive) sample, which was consisted of 100 neurological nurses who were working in neurological word.

Instrument of the study: A questionnaire was designed and constructed by the researcher to measure. The questionnaire consisted of (2) parts include:

Part I. Demographic information sheet: It was consisted of (6) items which include age, gender, merited, studies, and level of education.

Part II. Demographic information sheet: It was consisted of (25) items.

Validity of the Instrument: The content validity of the instrument was established through penal of (4) experts.

Reliability of the Instrument: Test retest reliability of the item scale was determined as average of (r=0.83).

Data collection: Direct interview with each subject through the constructed questionna- ire were done by the researcher. The period for data collection was starting from 1st Jan. 2011 to the end of April 2011.

Statistical data analysis: Appropriate statistical approach is used that includes descriptive statistical such as (frequencies and percentages) and inferential statistical such as contingency coefficient

RESULTS:

Table 1. Distribution of the sample according to their socio demographical data

No.	Variables		
1.	**Age(years)**	**F.**	**%**
1.1.	18-22	7	7.0
1.2.	23-27	16	16.0
1.3.	28-32	24	24.0
1.4.	33-37	19	19.0
1.5.	38-42	9	9.0
1.6.	43-47	15	15.0
1.7.	48 and above	10	10.0
	Total	**100**	**100.0**
2.	**Gender**	**F.**	**%**
2.1.	Male	65	65.0
2.2.	Female	35	35.0
	Total	**100**	**100.0**
3.	**Level of education**	**F.**	**%**
3.1.	Primary nursing school graduate	12	12.0
3.2.	Secondary nursing school graduate	26	26.0
3.3.	Nursing Institute graduate	51	51.0
3.4.	Nursing Collage Graduate	11	11.0
	Total	**100**	**100.0**
4.	**Years of work**	**F.**	**%**
4.1.	Under 1 year	7	7.0
4.2.	1-5	41	41.0
4.3.	6-10	25	25.0
4.4.	11-15	9	9.0
4.5.	16-20	5	5.0
4.6.	20 and above	13	13.0
	Total	**100**	**100**
5.	**Years of experience**	**F.**	**%**
5.1.	Under 1 year	8	8.0
5.2.	1-5	44	44.0
5-3.	6-10	22	22.0
5.4.	11-15	9	9.0
5.5.	16-20	7	7.0
5.6.	20 and above	10	10.0
	Total	**100**	**100**
6.	**Training courses**	**F.**	**%**
6.1.	Non	30	30.0
6.2.	Once	31	31.0
6.3.	Twice	14	14.0
6.4.	Three or more times	25	25.0
	Total	**100**	**100**
7.	**Location of the training courses**	**F.**	**%**
7.1.	Training inside the country	55	78.5
7.2.	Training outside the country	15	21.5
	Total	**70**	**100**
8.	**Period of Training**	**F.**	**%**
8.1.	Non	30	30.0
8.2.	Less than 1 month	51	51.0
8.3.	1 month	19	19.0
	Total	**100**	**100**

F. =Frequency, %=Percent

This table shows that most nurses (24%) were of age group (28-32) years old, and they were (65%) of them male ,level of education represents that half of them (51%) nursing institute ,most of nurses work for (1-5) years old represents (41%),and (44%) of nurses had (1-5) years' experience in neurosurgical wards. The majority of nurses (30%) did not have training courses in neurosurgical wards nearly in same percentage (31%) of nurses training for one time. (78.5) of nurses was training inside Iraq, (21.5) training outside of Iraq. (51%) of nurses are training for less than one month of time.

Table 2: Knowledge of the Nurses with 3 point level scale by total Frequencies, mean score and comparative significant

No.	Items	Know	Uncertain	Don't Know	M.S	C.S
1.	Prepared Glasgow Scale (GCS), mainly to measure the level of awareness in patients with diseases or injuries leading to influence the level of consciousness.	**91**	**9**	**0**	**2.91**	**H.S**
2.	Prepared Scale (GCS), mainly to measure the level of memory in Patients with head injuries.	**68**	**18**	**14**	**2.54**	**H.S**
3.	Attributed to the preparation and application of scale (GCS) to researchers at the University of Glasgow in 1974.	**54**	**37**	**9**	**2.45**	**S.**
4.	Uses a scale (GCS) only to measure the level of consciousness immediately after the injury.	**58**	**30**	**12**	**2.46**	**S.**
5.	Consists of a scale (GCS) of three key variables is to respond In visual, verbal response, Motor Response.	**74**	**24**	**2**	**2.72**	**H.S**
6.	Be the outcome scale (GCS) to respond in visual to the catalyst ranges between (1_4).	**31**	**55**	**14**	**2.17**	**S.**
7.	Be the outcome measure (GCS). Verbal response to stimuli ranging between (1_5).	**44**	**47**	**9**	**2.35**	**S.**
8.	Be the outcome measure (GCS) of the Motor response to stimuli ranging between (0-5).	**37**	**45**	**18**	**2.19**	**S.**
9.	The application of scale (GCS) guides the work of all educational levels of nurses and nurses working in intensive care units.	**75**	**19**	**6**	**2.69**	**H.S**
10.	The application of scale (GCS) working directory to the measure of the level of awareness of the limited application of the doctors working in intensive care units.	**44**	**19**	**37**	**2.07**	**S.**
11.	The use of Endo tracheal tube (ETT) to the patient an impediment to the discretion of the outcome measure (GCS) to the verbal response.	**49**	**33**	**18**	**2.31**	**S.**
12.	Is a severe swelling of the face or eyes of the patient to determine the outcome of the barrier scale (GCS) and private sectors to visual response.	**52**	**38**	**10**	**2.42**	**S.**
13.	The use of anesthetics and sedative to give the wrong results of the outcome scale (GCS).	**59**	**27**	**14**	**2.45**	**S.**
14.	Use of narcotic and sedative drugs does not affect the results of scale (GCS).	**27**	**28**	**45**	**1.82**	**S.**
15.	Used drug (Propofol) in the corridors of Intensive Care for the impact that real estate short acting)) at the level of awareness and thus enable us to identify the outcome (GCS) of the patient.	**32**	**56**	**12**	**2.20**	**S.**
16.	Uses a scale (GCS) for children age pre-speech.	**44**	**39**	**17**	**2.27**	**S.**
17.	Explain the outcome scale (GCS) 8> that the injury or the state of the patient deteriorated severely in terms of awareness.	**50**	**40**	**10**	**2.40**	**S.**
18.	Are an outcome scale (GCS) within the range of (9 -12) that the state of the patient an average intensity of the moderate.	**42**	**49**	**9**	**2.33**	**S.**
19.	Are an outcome measure (GCS) 13> that the situation of the patient's distress in terms of simple awareness.	**40**	**43**	**17**	**1.77**	**S.**
20.	Correlation between the index of the outcome measure (GCS) and the evolution of the patient's condition, whether negatively or positively.	**66**	**28**	**6**	**2.60**	**H.S**
21.	Are an outcome scale (GCS) guide for the classification of the severity of head injuries (Head Injury) (Mild, moderate, severe).	**64**	**28**	**8**	**2.56**	**H.S**
22.	Measured the level of awareness (GCS) of the patient who suffers from a severe injury to the eyes the remembrance (calculated the level of awareness of audio and Motor Response only).	**37**	**40**	**23**	**2.14**	**S.**
***23.**	Measured the level of awareness (GCS) of the patient who suffers from a severe injury to the eyes	**58**	**37**	**5**	**1.47**	**N.S**

M.S =Mean of Score, C.S=Correlation Significant

The finding of this table indicates that the nurses ' have inadequate Knowledge in all items concerning (GCS).

Table 3. Correlation ship of the contingency coefficient and significant level responding under and upper cut of point in compact form of nurses 'knowledge among age

Nurse's Knowledge / Age		Under cut off point	Upper cut off point	Total	*C.C. Test	**P value	C.S
18-22	F	6	1	7	.232	.515	NS
	%	6.0%	1.0%	7.0%			
23-27	F	15	1	16			
	%	15.0%	1.0%	16.0%			
28-32	F	19	5	24			
	%	19.0%	5.0%	24.0%			
33-37	F	14	5	19			
	%	14.0%	5.0%	19.0%			
38-42	F	9	0	9			
	%	9.0%	.0%	9.0%			
43-47	F	12	3	15			
	%	12.0%	3.0%	15.0%			
48 and more	F	9	1	10			
	%	9.0%	1.0%	10.0%			
Total	F	84	16	100			
	%	84.0%	16.0%	100.0%			

***Contingency coefficient,**S=significant (p-value≤ 0.25)**

The table shows that (19.0%)of the study sample were within age group (28-32)years old (15.0%) were (23-27)years old and nearly the same percentage (14.0%) were within age group (33-37)years old respectively ,all of these percentages were responding undercut of point of nurses' knowledge .Furthermore ,the result has indicated that there has been non-significant relationship between age and nurses' knowledge (C.C.=0.232).

Table 4. Correlation ship of the contingency coefficient and significant level responding under and upper cut of point in compact form of nurses' knowledge among gender

Nurse's Knowledge / Gender		Under cut off point	Upper cut off point	Total	C.C. Test	**P Value	C.S
Male	F	56	9	65	.080	.423	NS
	%	56.0%	9.0%	65.0%			
Female	F	28	7	35			
	%	28.0%	7.0%	35.0%			
Total	F	84	16	100			
	%	84.0%	16.0%	100.0%			

***Contingency coefficient, **S=significant (p-value≤0.25)**

The table shows the majority of nurses' gender in these study Male (56.0%) that represent half of Female (28.0%) responding under cut of point nurses' knowledge .Furthermore ,the result has indicated that there has been non-significant relationship between gender and nurses' knowledge (C.C.=0.080).

Table 5. Correlation ship of the contingency coefficient and significant level of education responding under and upper cut of point in compact form of nurses' knowledge among level of education

Nurse's Knowledge / Education		Under cut off point	Upper cut off point	Total	*C.C. Test	**P Value	C.S.
Primary nursing school graduate	F	10	2	12	.111	.742	NS
	%	10.0%	2.0%	12.0%			
Secondary nursing school	F	22	4	26			
	%	22.0%	4.00/o	26.0%			
Nursing Institute graduate	F	44	7	51			
	%	44.0%	7.0%	51.0%			
Nursing Collage Graduate	F	8	3	11			
	%	8.0%	3.0%	11.0%			
Total	F	84	16	100			
	%	84.0%	16.0%	100.0%			

***Contingency coefficient, **S=significant (p-value≤0.25)**

The Table shows that (44.0%)of the study sample were nursing institute graduate and (22.0%) were secondary nursing school graduate ,both of them were responding under cut off point of nurses' knowledge ,while the result has indicated that there has been non-significant relationship between level of education and nurses' knowledge (C.C.=O. 1 11).

Table 6. Correlation ship of the contingency coefficient and significant level responding under and upper cut of point in compact form of nurses' knowledge among years of work in hospital

Nurse's Knowledge / Work		Under cut off point	Upper cut off point	Total	*C.C. Test	**P value	C.S.
Under	F	7	0	7	.188	.597	NS
	%	7.0%	.0%	7.0%			
1-5	F	34	7	41			
	%	34.0%	7.0%	41.0%			
6-10	F	19	6	25			
	%	19.0%	6.0%	25.0%			
11-15	F	8	1	9			
	%	8.0%	1.0%	9.0%			
16-20	F	5	0	5			
	%	5.0%	.0%	5.0%			
21-above	F	11	2	13			
	%	11.0%	2.0%	13.0%			
Total	F	84	16	100			
	%	84.0%	16.0%	100.0%			

***Contingency coefficient,* *S=significant (p-value≤0.25)**

The table shows that (34.0%) of the study sample have (1-5) years of work in hospital, were (19.0%) of nurses work to (6-10) years in hospital respectively, all were responding under cut of point of nurses' knowledge. Furthermore, the result has indicated that there has been non-significant relationship between years of works in hospital and nurses' knowledge (C. C. =0.188).

Table 7. Correlation ship of the contingency coefficient and significant level responding under and upper cut of point in compact form of nurses' knowledge among years of experience in Neurosurgical ward

Nurse's knowledge / Years of experience		Under cut off point	Upper cut off point	Total	*C.C. Test	**P value	C.S.
Under 1	F	8	0	8	.229	.356	NS
	%	8.0%	.0%	8.0%			
1-5	F	36	8	44			
	%	36.0%	8.0%	44.0%			
6-10	F	16	6	22			
	%	16.0%	6.0%	22.0%			
11-15	F	8	1	9			
	%	8.0%	1.0%	9.0%			
16-20	F	7	0	7			
	%	7.0%	.0%	7.0%			
21 and	F	9	1	10			
	%	9.0%	1.0%	10.0%			
Total	F	84	16	100			
	%	84.0%	16.0%	100.0%			

***Contingency coefficient, **S=significant (p-value≤0.25)**

The table shows that (36.0%) of the study sample have (1 -5) years of Experience in neurosurgical wards, were (16.0%) of nurses' Experience to (6-10) years in neurosurgical wards respectively, all were responding under cut of point of nurses' knowledge. Furthermore, the result has indicated that there has been non-significant relationship between years of Experience in neurosurgical wards and nurses' knowledge (C.C. =0.229).

Table 8. Correlation ship of the contingency coefficient and significant level responding under and upper cut of point in compact form of nurses' knowledge among number of times to train

Nurse's Knowledge / Training course		Under cut off point	Upper cut of point	Total	*C.C. Test	**P value	C.S.
Non	F	22	8	30	.322	.125	S
	%	22.0%	8.0%	30.0%			
One	F	27	4	31			
	%	27.0%	4.0%	31.0%			
Tow	F	11	3	14			
	%	11.0%	3.0%	14.0%			
Three or More	F	24	1	25			
	%	24.0%	1.0%	25.0%			
Total	F	84	16	100			
	%	84.0%	16.0%	100.0%			

***Contingency coefficient, **S=significant (p-value≤0.25)**

The table shows that (27.0%)of the study sample training to once in training session that established in other hospital ,while (24.0%) were sharing in training to three or more session that established in other hospital and both of them were responding under cut off point of nurses' knowledge. Furthermore, the result has indicated that there has been a significant relationship between sharing in training course which established by other hospital and nurses' knowledge (C.C. =0.322).

Table 9. Correlation ship of the contingency coefficient and significant level responding under and upper cut of point in compact form of nurses' knowledge among period of training session

Nurse's Knowledge / Period of Training course		Under cut of point	Upper cut of point	Total	*C.C. Test	P value	C.S.
Non	F	22	8	30	.205	.113	S.
	%	22.0%	8.0%	30.0%			
Under 1month	F	44	7	51			
	%	44.0%	7.0%	51.0%			
1 month and more	F	18	1	19			
	%	18.0%	1.0%	19.0%			
Total	F	84	16	100			
	%	84.0%	16.0%	100.0%			

***Contingency coefficient, **S=significant (p-value≤0.25)**

The table shows that (44.0%) of the study sample have one month period of training course, while (22.0%) haven't been sharing in any training course and have not a period of training course and all of them were responding under cut off point of nurses' knowledge .Furthermore, the result has indicated that there has been a significant relationship between the period of training course and nurses' knowledge.

DISCUSSION:

Part I .Discussion of socio demographical data

The study revealed that most of the nurses (19.0%) were of age group (28-32) years old (Table 1).This result was agreed with result obtain from study done by Jassal, et al. (1995)[7].The study showed that most of the nurses (56.0%) where male and (28.0%) where female (Table 1).This result agreed with study conducted by Al-Sai'di (2008) who find that (58%) of nurses were male[8]. The study showed that the majority(44.0%) of the nurses were Nursing Institute graduate (Table 1).This result inconsistent with Phipps, et, al (2003) which was indicated that the majority (64.0%) had bachelor degree in nursing[9]. The study showed that the majority (34.0%) of nurses have (1-5) years old (Table 1). This result disagree with study conducted by Al-Sai'di (2008) which indicated that (22%) of nurses have (6-10) years old of employ in a nursing field [8]. The study showed that the majority (36.0%) of nurses have (1-5) years old of experience in neurological ward. The study revealed that most nurses (27.0%) had one trained. This finding disagree to the result obtained from study conducted by Al-Ftlawy (2001) who find that (100%) of nurses didn't attend any training session [10]. The most of nurses (57.0%) had one trained inside Iraq, while most of nurses (69.0%) not have trained outside the country. The majority (44.0%) of the study sample had trained to under one month. This result was disagreeing with Nihmatolla, et al. (2005) who reported that (95%) of the nurses staff had no training session after graduation [11].

Part II: Discussion of Nurses' knowledge concerning Glasgow coma scale (G.C.S)

Section 1: Discussion of association between nurses' knowledge and their age:-

Table (3) presents the relationship between nurses' knowledge and their age .It show that there was non-significant relationship at p-value (0.515) level between nurses' knowledge and their age. This result was agree with the study which was done by Pawl (2007)Who represented that there was no significant

relationship between nurses' knowledge and their age[12]. Phipps, et al. (2003) have showed that knowledge was highest in 30-40 years old and lowest in the >50 years group of the staff [9] .Based on the researcher's point of view, acquired knowledge may not contribute to the increasing age, that nurse who is aged (25-30) years old may had huge content of knowledge compared either nurse who is aged older than this interval, depending on their study of knowledge and their efficacy toward increasing knowledge.

Section 2: Discussion of association between nurses' knowledge and their gender:-

Table (4) present the relationship between nurses' knowledge and their gender .It shows that there was no a significant relationship at p-value (0.423) level between nurses' knowledge and their gender. Pawl (2007) who showed that in the study which the study is conflicts with was carried out to evaluate the effectiveness of information booklet on the knowledge of the nurse that there was no significant association between nurses' knowledge and their gender [12].

Section3: Discussion of association between nurses' knowledge and their level of Education:-

Table (5) present the relationship between nurses' knowledge and their level of education .It shows that there was no a significant relationship at p-value (0.742) level between nurses' knowledge and their level of education. This result was agreed with the finding off Al-Mansory (2005) and Al-Barody (1990) which reported that many authorities in education emphasized that the level of education has positive effect on the quality and quantity of knowledge and skills acquired by the recipient of education[13 and 14].

Section 4: Discussion of association between nurses' knowledge and their years of Work in hospital:-

Table (6) present the relationship between nurses' knowledge and their years of work .It shows that there was no a significant relationship at p-value (0.188) level between nurses' knowledge and years of work.

Sections 5: Discussion of association between nurses' knowledge and their years of Experience:-

Table (7) indicated that the relationship between nurses' knowledge and their years of experience .It shows that there have no a significant relationship at p-value (0.356) level between nurses' knowledge and years of experience in neurological wards. This finding was agreed with Pawl (2007) who stated that there was no significant association between nurses' knowledge and length of clinical experience [12].

Section 6: Discussion of association between nurses' knowledge and their training:-

Table (8 and 9) indicated that there was a significant relationship at p-value (0.125) level between nurses' knowledge and training.

CONCLUSION:

The study concluded that the all nurses' knowledge was almost in adequate knowledge concerning application Glasgow Coma Scale (G.C.S) Table (2).

RECOMMENDATIONS:

1. Importance of employ nurses' collage in neurological wards.
2. A booklet should be designated and distributed to all nurses who were working in neurological wards including standard of (G.C.S) that must be applied and fallowed in neurological wards.
3. An education program should be designed to the nurses who were working in the neurological ward to increase their knowledge concerning application of G.C.S.

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