



Nurse competence in using the Glasgow Coma Scale in the emergency installation room of hospital

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ABSTRACT

The Glasgow Coma Scale technique is used by nurses and health care professionals to facilitate assessment documentation of consciousness scale of. A consciousness assessment needed in patients with neurological problems and injuries. The Glasgow Coma Scale is also needed to determine clinical decisions in the hospital emergency unit. The purpose of this study is to assess the nurses' ability in the Emergency Installation room who already have an emergency training certificate and to analyze the factors that influence the emergency nurses' competence about the Glasgow Coma Scale at the Emergency Installation room of Government General Hospital. The method used is descriptive-analytic with the chi-square relationship test approach and the samples were taken based on total sampling, namely all nurses in Emergency Installation as many as 73 people spread across three hospitals in West Java. The sample has nurses' inclusion criteria who have emergency department training certificates and served in the Emergency Installation. Exclusion criteria were nurses who served structurally (head of the room and deputy head of the room) and were on leave/permission / sick / not on duty. The results showed that nurse competence was influenced by nurses' age and years of service. For conclusion, Glasgow Coma Scale instrument has an important role in the emergency room so, it needed the same benchmarks between the hospital and the training which was followed by nurses. The recommendations based on this research are the need for standard benchmarks and modification of the Glasgow Coma Scale Instrument to make it easier to use and remain accurate as a predictor of death.

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Kompetensi perawat dalam menggunakan *Glasgow Coma Scale* di ruang instalasi darurat rumah sakit

ABSTRAK

Teknik Glasgow Coma Scale digunakan oleh perawat dan tenaga medis kesehatan untuk memudahkan pendokumentasian penilaian skala kesadaran, penilaian kesadaran dibutuhkan pada pasien permasalahan neurologis dan cedera. Glasgow Coma Scale juga diperlukan untuk menentukan keputusan klinis pada unit gawat darurat di rumah sakit. Tujuan dari penelitian, yaitu menilai kemampuan perawat di ruangan Instalasi Gawat Darurat yang sudah memiliki sertifikat pelatihan gawat darurat dan menganalisa faktor-faktor yang mempengaruhi kompetensi perawat gawat darurat tentang Glasgow Coma Scale di Instalasi Gawat Darurat Rumah Sakit Umum Pemerintah. Metode yang digunakan adalah deskriptif analitik dengan pendekatan uji hubungan chi square dengan sampel diambil berdasarkan total sampling yaitu seluruh perawat Instalasi Gawat Darurat sebanyak 73 orang yang tersebar di tiga rumah sakit di Jawa Barat. Sampel memiliki kriteria inklusi perawat yang memiliki sertifikat

Kata kunci:

Teknik Glasgow Coma Scale
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pelatihan gawat darurat dan bertugas di Instalasi Gawat Darurat Kriteria eksklusi yaitu perawat yang menjabat struktural (kepala ruangan dan wakil kepala ruangan) dan sedang cuti/izin/sakit/tidak bertugas. Hasil penelitian menunjukkan bahwa kompetensi perawat dipengaruhi oleh usia dan masa kerja perawat. Kesimpulan instrument Glasgow Coma Scale memiliki peranan penting di ruang unit gawat darurat sehingga di perlukan tolak ukur yang sama antara rumah sakit dan pelatihan yang di ikuti oleh perawat. Rekomendasi berdasarkan penelitian ini yaitu perlu tolak ukur yang baku dan modifikasi Instrument Glasgow Coma Scale agar lebih mudah di gunakan dan tetap akurat sebagai prediktor kematian.

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Introduction

The Glasgow Coma Scale (GCS), developed since 1974, was used by nurses and other health care professionals to facilitate documentation of consciousness assessment scale, consciousness assessment needed in patients with head injuries, intracranial haemorrhage and many more (Teasdale et al., 2014). This means that GCS can be used in many cases in hospitals. Not only to assess the presence of head trauma but to assess a number of conditions that require an awareness assessment. GCS is also needed to determine clinical decisions in an emergency installation at the hospitals (Kondo et al., 2011). Blood pressure and GCS tests are appropriate measures to predict mortality in adult patients with trauma (Gerdin et al., 2016).

GCS as a prediction to determine client care before going to the hospital for consideration is given breathing assistance or is in paralysis (Majdan et al., 2015). Patients who have four GCS values (89%) will have more predictions of death than patients with three GCS (71) (Zubkov et al., 2009), this shows how important nurses must provide appropriate scoring to describe the exact state of patients. Contrastly, in clinical situations many problems that often arise were inaccuracies in GCS assessments that use eye responses, motor and verbal responses have been widely reported and this was influenced by knowledge and training (Heim et al., 2009) (Adeleye et al., 2012) (Santos et al., 2016) (Bansal & Chawla, 2016).

Nurses who carry out GCS assessments on patients are the emergency installation nurses. At least, the nurses have training qualifications for Emergency Patient Management (PPGD) or *Basic trauma Cardiac Life Support* (BTCLS) commonly used in government public hospitals.

The purpose of this research is to assess the nurses' ability in the Emergency Installation room who already have an emergency training certificate and analyze the factors which consist of knowledge (Adeleye et al., 2012), training (Irawan et al., 2010) (Bansal & Chawla, 2016), and length of working (Heim et al., 2009) which have an influence on the emergency nurses competence about the Glasgow Coma Scale in the Emergency Department of the Government Public Hospital.

Method

This study uses a descriptive analytic method which analyzes the relationship between nurses who already have an emergency training certificate and their ability to assess GCS in patients with neurological impairment.

Data analysis uses bivariate analysis to analyze the relationship between training and nurses' ability to assess awareness using GCS was showed by the P-value <0.05, so there was a significant relationship. The calculation of statistical analysis uses the Chi-Square Test to analyze the significance of the relationship between nurses who already have Emergency Installation training certificates and their ability to assess GCS in patients. Nurse competencies measured by a questionnaire consisting of 5 questions regarding knowledge of GCS theory and 5 questions in the form of case scenarios and then analyzed steps. The first is to look for the average value, after looking at the average value (t mean), it was less if it was under the average value, it was good if exceeds the average value.

The study sample was all the nurse on the emergency installation room in 3 government public hospitals namely in Banjar City, Ciamis Regency, and Tasikmalaya City. Measurement of nurse ability was measured using a questionnaire consisting of 4 questions regarding respondent characteristics, 5 questions regarding GCS theory, 5 questions about scenarios, 1 question regarding participation in training, and 1 question regarding validity or inactivity of basic life support training or the like.

The questionnaire will be tested for validity and reliability at Garut Regional Public Hospital (RSUD) as many as 10 people for the sample, with a valid conclusion due to the 0.005 confidence test and a sample of 10 people, namely Cronbach's alpha 0.989. The sample has nurses' inclusion criteria who have emergency department training certificates and served in the emergency room. Exclusion criteria were nurses who served structural (head of the room and deputy head of the room) and were on leave/permission/sick/not on duty. Samples were taken based on a total sampling of 73 nurses, the sample was damaged by 1 person so that the sample became 72 people.

This research was issued by the BTH Tasikmalaya STIKes Research Ethics Commission on behalf of the Ministry of Health of the Republic of Indonesia. The research carried out at the dr. Selamat Garut Hospital, Dr. Soekardjo Hospital on Tasikmalaya City and West Java Banjar City Hospital. The study period was from March to September 2019

Results and Discussion

Tabel 1

Study Result of certificate ownership for emergency installation nurse in GCS competence result (N=100)

Training Certificate	Result Competence of Emergency Installation Nurse						Mean	p-value
	Good		Poor		Total			
	F	%	F	%	F	%		
Basic Life Support (BLS)	3	4,2	3	4,2	6	8,3		
Basic Trauma Cardiac Life Support (BTCLS)	29	40,3	19	26,4	48	66,7		
Emergency First Aid	7	9,7	4	5,6	11	15,3	7,6	0,889
Emergency Nurse Pediatric Course (ENPC)	1	1,4	1	1,4	2	2,8		
Advance Cardiac Life Support (ACLS)	2	2,8	3	4,2	5	6,9		

Table 1 shows the results of the emergency nurses competency, as many as 58.3% had good competence, 41.7% had poor competence. Ownership of emergency installation training certificates did not have a significant relationship

with nurse competence in the Glasgow Coma Scale with a p-value of 0.889. The mean for nurse competence in the emergency room is 7.6.

Tabel 2

Relationship between nurse age with the nurse's GCS competence in the emergency installation (N=100)

Variables	Result Competence in Emergency Installation room						p-value
	Good Competence		Poor Competence		Total		
	F	%	F	%	F	%	
Age							
20-29 years	9	12,4	16	21,9	25	34,3	0,007
30 years ≤	33	45,2	15	20,5	48	65,7	
Education Level							
D-III Nursing	19	26,1	16	21,9	35	48	0,381
S1 Nursing +Ners	23	31,5	15	20,5	38	52	
Years of Service							
1-5 years	8	11	14	19	22	30,8	0,016
5 years ≤	34	47	17	23	51	69,2	

Table 2 shows the study results that age has a significant relationship to the nurse competence as evidenced by a significant p-value and the age of nurses who work in three hospitals, many aged over thirty years as many as 65,7 percent. The study results that the education level did not have a significant value on the results of nurse GCS competence in the emergency installation. The results of the study that years of service had a significant influence on nurses' GCS competence in emergency installation.

emergency installation room so, the emergency nurses rarely face cases that require the use of GCS.

Research Results on the Relationship between Nurse Age and GCS Nurse Competence.

This study showed that of 42 respondents aged between 20-29 years as many as 9 respondents, over 30 years as many as 33 respondents. In this study, age had a significant effect on GCS assessment competencies. The respondent age had a significant influence on GCS competency because based on the results of research, some nurses who work on emergency installation was already placed in an intensive room so, the respondents who are older have experience in assessing GCS (Heim et al., 2009).

Installation Training certificate with Nurses' Competence in assessing GCS

As many as 42 correspondents have basic life support training certificates and the like, all certificate ownership periods are still in an active condition so that correspondents have training that is still active to work in the emergency installation room. Training has a significant effect on GCS competence (Santos et al., 2016) but not with this study which showed no significant relationship between training with GCS competency in nurses. So the results of the study differ from some other studies that training has an influence on knowledge (Irawan et al., 2010), (Bansal & Chawla, 2016) this difference is due to the nurses' competencies, many of them answer incorrectly in theory questions about GCS, while in many cases the answers are correct so that many of the problems are wrong about the theory. So, it needs to be refreshed regularly. The mastery of GCS theory consisting of eye, motor, verbal still has a misunderstanding in perceiving (Santos et al., 2016). The competency score is still 47.1%, it was also possible that different cases differ in each

Relationship of nurse education level with nurse GCS competence in the emergency department

The education level of D-III nurses was 19 people, S1 Nursing + Ners was 23 people. The research showed the education level did not have a significant relationship to GCS assessment competencies. The education level has an attachment to knowledge. Research in Nigeria showed that some medical personnel do not have enough knowledge to do the Glasgow Coma scale (GCS) (Adeleye et al., 2012). Not much different from in Indonesia, especially in West Java. The competence of the emergency installation nurse consists of knowledge and skill competence. The research showed the nurses who had competency in assessing GCS is still 58.3%. So, from the point of view of nurses' knowledge and competence in 3 hospitals was not optimal if faced with

cases of decreased awareness. So, the nurses need to have comprehensive training or in accordance with the filed needs. The research showed that nurse training was still needed especially triage because GCS was a part of triage (Febrina & Sholehah, 2018). Therefore, the education level can not stand alone, it requires special training for the emergency installation room in accordance with has been carried out in the field and it becomes a standard SOP that in the emergency room the nurses must have a minimum basic life unit training.

Relationship between nurses' years of service and nurses' GCS competency in the emergency department

The length of work is divided into less than 5 years and more than 5 years because nurses need up to 3 years experience to be able for assessing GCS well and have 5 years experience to have very good competency regarding GCS (Santos et al., 2016).

The results showed that the working period of more than 5 years had a significant relationship to the GCS competence of nurses. Work experience has an important role in the accuracy of the use of GCS where work experience based on research results was very significant. This is likely due to the fact that nurses often get cases of decreased

consciousness while working so, the competence in assessing the decrease in awareness was increasingly trained. It is also directly proportional to the nurses' age in the emergency installation room. Certainly, the age that is increasing was also directly proportional to the experience and competence in providing GCS assessments (Heim et al., 2009).

Conclusions and Recommendations

Ownership of training certificates and education level did not have a significant effect on nurses' competencies in the use of GCS by nurses. Whereas the age factor and work experience had a significant influence.

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