

Impact of Planned Teaching Programme on Glasgow Coma Scale Among Staff Nurses

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ABSTRACTS

Background of the study: The Glasgow Coma Scale or GCS is a neurological scale that aims to give a reliable, objective way of recording the conscious state of a person for initial as well as subsequent assessment. The Glasgow Coma Scale or GCS is a neurological scale that aims to give a reliable, objective way of recording the conscious state of a person for initial as well as subsequent assessment. The health assessment to determine problems with neurologic structure and/or function may be conducted during a health screening may focus on chief complaints (such as headache), or may be part of a total health assessment. If the client's level of consciousness is altered, the nurse may be needed to assess the level of consciousness by using the Glasgow coma scale. It is very important that every nurse working in areas needing critical care such as High Dependency Units has enough knowledge to assess and intervene appropriately and she/he should also be able to communicate any change in patient's condition for multidisciplinary intervention. **Aims:** The study was aimed to evaluate the existing knowledge regarding Glasgow coma scale of staff nurses who are working in critical care unit. Find the effectiveness of planned teaching programme regarding Glasgow coma scale among the staff nurses of critical care unit. Find association between pre-test and selected variables of planned teaching programme regarding Glasgow coma scale among the staff nurses of critical care unit. **Material and Method:** The research design used in this study was pre experimental one group pre-test post-test design. The sampling techniques used for this study was non probability Convenient sampling. The samples were 60 Staff nurses from Dhiraj Hospital of Vadodara. The tool consists of socio demographic tool and structured knowledge questionnaires about Glasgow Coma scale data analysis was planned on the basis of objectives of the study using descriptive and inferential statistics in consideration with hypothesis of the research study. **Result:** This study revealed that knowledge regarding lifestyle modification during hypertension was inadequate and after the health education programme, knowledge regarding life style modification was increased. Data analysis was carried out using descriptive and inferential statistics method by using SPSS. It was observed that the mean post-test knowledge is significantly higher than the pre-test knowledge.

Discussion and conclusion

The overall experience of conducting this study was satisfying one as there was good co-operation from staff nurses and hospital authorities. The respondents were satisfied and happy with the information they received. The study was a new learning experience for the investigator. The results of the present study shows that there is a great need for the staff nurses to update their knowledge regarding Glasgow coma scale. The study reveals that Planned Teaching Programme could be used as an effective teaching strategy.

Keywords: Planned Teaching Programme, Glasgow coma scale, Staff Nurses

1. INTRODUCTION

“The Glasgow Coma Scale is an integral part of clinical practice and research across the World. The experience gained since it was first described in 1974 has advanced the assessment of the Scale through the development of a modern structured approach with improved accuracy, reliability, and communication in its use.”¹ - Sir Graham Teasdale, Emeritus Professor of Neurosurgery, University of Glasgow

The Glasgow coma scale is one of the neurological scale used to assess the patient in coma. The scale generally gives information about severity of head injury and its prognosis. The Glasgow Coma Scale provides a score in the range 3-15; in that patients with scores of 3-8 are usually said to be in a coma.² The Glasgow Coma Scale is a reliable scale and objective way of recording the initial and subsequent level of consciousness in a person after a brain injury. It is also used by trained staff at the site of an injury like a car crash or sports injury, or else it can be assessed by staff who are working in critical care area.³ Most of disability and mortality are happened because of traumatic brain injury according to epidemiological data.⁴ Traumatic brain injury (TBI)-the "silent epidemic"-contributes to worldwide death and disability more than any other traumatic insult. Yet, TBI incidence and distribution across regions and socioeconomic divides remain unknown. In an effort to promote advocacy, understanding, and targeted intervention, the authors sought to quantify the case burden of TBI across World Health Organization (WHO) regions and World Bank (WB) income groups.⁵

It is very important that every nurse working in areas needing critical care such as High Dependency Units has enough knowledge to assess and intervene appropriately and she/he should also be able to communicate any change in patient's condition for multidisciplinary intervention.⁶ The Glasgow Coma Scale has been a part of neurologic practice for 35 years and has proved to be an objective and reproducible way to describe a patient's level of consciousness and arousal. Administering the scale takes 3–5 minutes and requires no special equipment.⁷

The study was done by Nguyen Thi Hien in 2011 on “The accuracy of Glasgow coma scale Knowledge and Performance among Vietnamese nurses” it was found that nurses made significant errors in their performance of the GCS even though they showed a high level of theoretical knowledge. Moreover, the significant difference in knowledge between the performance groups was subsequently explored to emphasize the importance of GCS education.⁸ Some Study research 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.⁹⁻¹⁰

2. METHODOLOGY

The research design used in this study was pre-experimental one group pre-test post-test design. The sampling technique used for this study was non probability convenient sampling. The samples were 60 staff nurses. The tool consists of section A: socio demographic tool. Section B: Structured knowledge questionnaires. The data analysis was planned on the basis of objectives of the study using descriptive and inferential statistics in consideration with hypothesis of the research study. The data collection tool

includes two sections, the first one consist socio demographic characteristics such as Age, Gender, Professional Qualification, Professional experience, Past area of experience.

3. FINDINGS

The study was analysed by descriptive and inferential statistical methods, where Total 60 samples were analysed under study for Identified frequency percentage distribution of sample characteristics, grading and difference between pre and post knowledge score. Data was analysed in three sections, 1st section consist with Sample characteristics, 2nd section was with pretest of the samples, effectiveness of planned teaching program along with post test score 3rd section consist with hypothesis testing.

Section I- This section deals with description of sample characteristics of the subjects in terms of frequency and percentage.

TABLE 1
FREQUENCY AND PERCENTAGE OF DISTRIBUTION OF THE SAMPLE CHARACTERISTICS

n= 50

Variable	Frequency	Percentage
Age		
21 to 25 year	42	84%
26 to 30 year	05	10%
31 to 35 year	02	04%
36 to 40 year	01	02%
Gender		
Female	42	84%
Male	08	16%
Professional Qualification		
GNM	17	34%
Post Basic B.Sc Nursing	07	14%
B.sc Nursing	26	52%
Professional experience		
0-3yrs	44	88%
4-8 yrs	03	06%
> 9 yrs	03	06%
Past Area of experience		
Critical ward	27	54%
Intermediate ward	16	32%
General ward	04	08%
Other	03	06%

Data presented in the above table (1) reveals the following.

Majority of staff nurses are between age group of 21 to 25 years, 84% are female, 52% having B.sc Nursing professional qualification, 54% of the staff nurses has worked in critical area.

Section II

A) Evaluation of pretest knowledge score of staff nurses

TABLE 2
GRADING OF PRETEST KNOWLEDGE SCORES OF STAFF-NURSES

Range of Score	Percentage of Score	Level of Knowledge	Number of Staff nurses	Percentage of Students
0 – 10	0 - 33.33	Poor	26	52
10 – 20	33.33 - 66.66	Average	24	48
20 – 30	66.66 - 100	Good	00	00
Total			50	100

Data in table 2 showed that maximum number of subjects (52%) scored ranging between 0 - 33.33% poor knowledge and (48%) between 33.33% - 66.66% average in the pretest and (0%) between 66.66 – 100% subjects having good knowledge.

B) Evaluation of posttest knowledge score of staff nurses

TABLE 3
GRADING OF POSTTEST KNOWLEDGE SCORES OF STAFF-NURSES

Range of Score	Percentage of Score	Level of Knowledge	Number of Staff nurses	Percentage of Students
0 - 10	0 - 33.33	Poor	00	00
10 - 20	33.33 - 66.66	Average	14	28
20 - 30	66.66 - 100	Good	36	72
Total			50	100

Data in table 3 showed that maximum number of subjects (0%) scored ranging between 0 - 33.33% poor knowledge and (28%) between 33.33% - 66.66% average in the pre test and (72%) between 66.66 – 100% subjects having good knowledge.

TABLE 4
RANGE, MEAN, MEDIAN, MEAN PERCENTAGE SCORE OF PRETEST AND POST TEST OF KNOWLEDGE SCORES

Area	Range	Mean $\pm$ SD	Median	Mean % Score
Pretest	4-18	11.7 $\pm$ 3.60	06	23.4
Post test	14-29	24.3 $\pm$ 3.95	04	48.6

n=50

Maximum possible score: 30

It is evident from table 4 that the subjects posttest knowledge scores range from 14-29 was higher than their pretest knowledge score range (04-18). The data in table also depicted that mean posttest knowledge score ($X_2=24.3$) is higher than the mean pretest knowledge scores ($X_1 = 11.7$)

SECTION: III

The section III consist with hypothesis testing

A)H₁: -There will be significant difference between the mean pretest and posttest knowledge scores of the staff nurses regarding Glasgow Coma Scale

Significance of Difference between the Mean Pretest and Post Test Knowledge Scores.

In order to find out the significance of difference between the pretest and posttest knowledge scores a paired 't' test was computed and the data is presented in table 7. To test the statistical difference a null hypothesis was stated.

TABLE 5
SIGNIFICANCE OF DIFFERENCE BETWEEN THE MEAN PRETEST AND POST TEST KNOWLEDGE SCORES

n=50

Group	Mean		Mean difference	Std deviation Difference	Std. Err (Sd/ $\sqrt{n}$)	't' Value
	Pretest	Posttest				
Staff nurses	11.7	24.3	12.6	0.35	0.049	17.02

Max. Score 30 ($t_{49}=3.390$, $p> 0.001$)

Data in table 5 showed that the mean posttest knowledge scores (24.3) was higher than the mean pretest knowledge scores (11.7). The computed 't' value is 17.02 is higher than the tabled value t_{99} at $p>0.001$ level of significance. Hence H_1 hypothesis is accepted and thus shows that PTP was highly effective in increasing the knowledge of Glasgow coma scale.

Area Wise Paired 't' Test Showing Significant Difference between the Pretest and Posttest Knowledge Scores on Glasgow coma scale.

In order to find out the significance of difference between pretest and posttest knowledge scores of different areas a paired 't' test was computed and the data is represented in table

TABLE 6
SIGNIFICANCE OF DIFFERENCE BETWEEN THE MEAN PRETEST AND POST TEST KNOWLEDGE SCORES

n=50

Group	Mean		Mean difference	Std deviation Difference	Std. Err (Sd/ $\sqrt{n}$)	't' Value
	Pretest	Posttest				
Staff nurses	11.7	24.3	12.6	0.35	0.049	17.02

Max. Score 30 ($t_{49}=3.390$, $p> 0.001$)

Data in table 6 showed that the mean posttest knowledge scores (24.3) was higher than the mean pretest knowledge scores (11.7). The computed 't' value is 17.02 is higher than the tabled value t_{99} at $p > 0.001$ level of significance. Hence null hypothesis is rejected and thus shows that PTP was highly effective in increasing the knowledge of Glasgow coma scale.

Area Wise Mean Percentage of Pretest and Post Test Knowledge Scores.

The percentage of pretest and posttest knowledge scores were also found out in each area and the data are presented in table 6

TABLE 7

n=50

Area	score	Pretest		Posttest		Mean Actual gain percentage
		Mean	Mean %	Mean	Mean %	
General Concept Of Glasgow Coma Scale	14	8.73	62.35	12.6	90	27.65
Elements Of Glasgow Coma Scale	10	6.6	66	9.6	96	30
Assessment Of Glasgow Coma Scale And Posturing	06	4.02	67	5.72	95.33	28.33

Max. Score 30

The data in table 7 showed that mean percentage scores of the pretest was highest (67%) in this area Assessment Of Glasgow Coma Scale And Posturing and lowest (62.35) in the area of General Concept Of Glasgow Coma Scale .whereas mean percentage scores of posttest were higher than pretest knowledge scores in all areas.

B) H_0 . There will be no significant association between pretest knowledge regarding Glasgow coma scale with selected demographic variables.

Association between the pretest knowledge scores of the staff nurses and selected variables such as Age, Gender, Professional qualification, and Professional experience, past area of experience and analysis Shows that there is no significance relationship between pre-test knowledge score and demographic variables such as age, gender, professional qualification, professional experience, and area of experience. Hence, the research hypothesis H_0 is accepted. There is no significant association between pre-test knowledge score and selected demographic variables regarding Glasgow coma scale.

4. DISCUSSION

Glasgow Coma Scale (GCS) is a reproducible tool used by nurses in almost every healthcare facility to assess level of consciousness in a patient with a neurological problem. It is important to have the skill and knowledge when assessing and applying critical thinking to interpret the findings. The study intends to find out the knowledge of staff nurses regarding Glasgow coma scale. The findings of the

study have been discussed with reference to the objectives and hypothesis, Major Findings shows that 84 % of having age between 21 to 25yr, (84%) were females 52% were B.sc Nursing. subjects 88% had 0-3 years of professional experience Majority of subject they have 54%. Before the application of Glasgow coma scale proper knowledge and skills are needed. Here majority of staff nurses having poor knowledge or average before the application of planned teaching program on Glasgow coma scale after the teaching program they have enough knowledge regarding GCS, so aimed of this study was achieved.

5. CONCLUSION

It could be concluded that nurses need to improve their knowledge regarding Glasgow coma Scale. Planned teaching programme is an effective and accepted teaching strategy .The effectiveness have been more, with more numbers of subjects and with true experimental design.

Conflict of Interest

There was no conflict of interest.

Source of Funding

The study is not funded by any external sources as it is self-funded research project.

Ethical clearance

Ethical clearance has been obtained from the Sumandeep Vidyapeeth institutional ethical committee and willingness has been obtained from participants before data collection.

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