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EFFECTIVENESS OF SIMULATION TECHNIQUE ON KNOWLEDGE AND PRACTICE ON GLASGOW COMA SCALE AMONG NURSING STUDENTS OF SELECTED NURSING COLLEGE OF VADODARA

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Abstract: BACKGROUND: *The Glasgow coma scale is a neurological scale that aims to give a reliable, objective way of recording the conscious state of a person for initial wellbeing as subsequent assessment. A patient is assessed against the criteria of the scale, and the resulting point give a patient score between 3 (indicating deep unconsciousness) and either 14 (original scale) or 15 (the more widely used modified or revised scale). GCS was initially used to assess level of consciousness after head injury, and the scale is now used by first aid nurses and doctors as being applicable to all acute medical and trauma patients.* ***METHOD:*** *A quantitative research approach with pre- experimental one group pre-test post-test design with non-probability convenience sampling to collect the 150 samples. A structured questionnaire and Practice checklist was prepared to assess the knowledge and practice of nursing students.* ***RESULT:*** *The pre-test means score of knowledge of nursing students is 10.21(51.05%) and post-test mean score of knowledge is 15.69 (78.45%) The pre-test mean score of practice is 8.85 (44.26%) and post-test mean score of practice is 16.78 (83.93) The mean difference of pre and post level of knowledge is 5.48 and the mean difference of pre and post level of practice is 7.93 which show the effectiveness of Simulation technique on GCS. The paired't' calculated value of knowledge is (16.52) and the calculated't' value of practice is (30.69) at 0.05 level of significance which is more than table value of "t". Therefore after conduting this pre-test post-test we have found that the students have achieved more scores in the post-test than pre-test. Hence, H_1 is accepted. However, the pre test practice score only associate with the age, gender, area, study of year and course of study. Hence, hypothesis are accepted.* ***CONCLUSION:*** *The study concluded that majority of nursing students were having inadequate level of knowledge and average practice. The knowledge and practice regarding GCS was effective among nursing students in improving knowledge and practice score.*

Key Words: *Effectiveness, Glasgow Coma Scale, Knowledge, Practice, Nursing students, Simulation technique.*

1. INTRODUCTION:

The Glasgow coma scale is a neurological scale that aims to give a reliable, objective way of recording the conscious state of a person for initial well as subsequent assessment. A patient is assessed against the criteria of the scale, and the resulting point give a patient score between 3 (indicating deep unconsciousness) and either 14 (original scale) or 15 (the more widely used modified or revised scale). GCS was initially used to assess level of consciousness after head injury, and the scale is now used by first aid nurses and doctors as being applicable to all acute medical and trauma patients.[1]

The scale was published in 1974 by Graham Teasdale and Bryan J. jennet, professors of neurosurgery at the University of Glasgow's Institute of neurological sciences at the cities southern general hospital. These neurosurgery professors continued to developed important work in field of head traumas, publishing management of head injuries in 1981. The health assessment to determent problems with neurologic structure and/ or function may be conducted during a health screening may focused on chief complaint (such as headache) or may be part of a total health assessment. If the client level consciousness is altered, the nurse may be needed to assess the level consciousness by using the GCS.[2,3]

2. NEED FOR THE STUDY:

The accuracy of the assessment data and the nurses critical thinking skill to identify the changes, interpret its significance and take appropriate action from the foundation of neuroscience nursing practice. The neurological assessment is a key component in the care of the neurological patient. It can help the nursing students to detect the presence of neurological disease or injury and monitor its progression, determine the type of care and gauge the patients' response to intervention. The GCS is the corner stone of the neurological assessment of the patient used by both nursing and medical staff. The GCS is a scaled assessment that measures the degree of consciousness under three

distinct categories of neurological functioning, and each category is further subdivided and given a score. The GCS is the best measure of the overall brain dysfunction caused by traumatic brain injuries.[4,5]

3. LITERATURE REVIEW:

Fortune PM (2010) et.al All conducted study on the motor response to stimulation predicts outcome as well as the full Glasgow Coma Scale in children with severe head injury Recovery with independent function good outcome, or death, persistent coma, or dependent bad outcome at 6 months after the injury. Complete information was available for 130 patients. Both the full Glasgow Coma Scale and the motor response predicted outcome well: the area under the receiver operating characteristic plot was 0.8 for the full score and 0.89 for the motor response. Both the full Glasgow Coma Scale score and the motor response provide a useful indication of long-term outcome, although neither score is sufficiently accurate to be used to limit treatment. The full Glasgow Coma Scale does not have a linear relationship with mortality, and there is poor interobserver agreement. The motor response should be used in children in preference to the full Glasgow Coma Scale; the predictive power is equivalent to the full Glasgow Coma Scale, there is a linear relationship to mortality, and it is easier to collect accurately.[6]

Emami P(2017) et. al A Glasgow Coma Scale (GCS) score of 8 or less in patients suffering from severe traumatic brain injury (TBI) represents a decision-making marker in terms of intubation. This study evaluated the impact of prehospital intubation on the mortality of these TBI cases among different age groups.This study included the data from patients predominantly suffering from severe TBI [Abbreviated Injury Scale (AIS) of the head ≥ 3, GCS score < 9, Injury Severity Score (ISS) > 9] who were registered in TraumaRegister DGU® from 2002 to 2013. An age-related analysis of five subgroups was performed (1-6, 7-15, 16-55, 56-79, and ≥ 80 years old). The observed and expected mortality were matched according to the Revised Injury Severity Classification, version II.A total of 21,242 patients were included. More often, the intubated patients were severely injured when compared to the non-intubated patients (median ISS 29, IQR 22-41 vs. 24, IQR 16-29, respectively), with an associated higher mortality (42.2% vs. 30.0%, respectively). When compared to the calculated expected mortality, the observed mortality was significantly higher among the intubated patients within the youngest subgroup (42.2% vs. 33.4%, respectively; $p = 0.03$).[7]

4. MATERIAL AND METHOD:

Research design

The research design used was pre experimental one group pre-test post-test design

Research Setting

Nursing Students from a selected Nursing College, Vadodara

Sample

150 Nursing students

Inclusion criteria

- 2nd year, 3rd year, 4th year BSc and 3rd year GNM and 1st year P.B.B.sc, 2nd year P.B B.Sc who are studying in selected Nursing College of Vadodara.
- Selected Nursing College students of Vadodara present during the time of data collection.

DESCRIPTION OF TOOLS

SECTION 1:

- Consists of demographic variables such as Age, Gender, Course of study, Year of study, Area.

SECTION 2:

- Questionnaires consist of 20 items Self Structure questionnaire.
- Scoring procedure:
  For knowledge assessment If answer is right then give 1
  If the answer is wrong then give 0.
- Scoring interpretation:
  Inadequate :- <10
  Adequate :- 11 – 15
  Excellent :- 16 – 20
- **Section 3**: practice check list will be used.
  Inadequate :- <10
  Adequate :- 11 - 15
  Excellent :- 16 – 20

Reliability

The reliability of tool established by using split half method Spearman Brown Prophecy formula (r=0.75) reliability test.

Data collection procedure

The formal permission was obtained for the approval of the study from the college authority. The data collection done within a given period of 1 week. The investigator selected the subject and established the rapport by explaining purpose of the study, the co-operation required and the anonymity assured before obtaining verbal consent. Initially the demographic tool, self structured questionnaire and checklist administered to the sample to know existing level of knowledge regarding GCS, then the Simulation was given to the samples of the study. After 7 day

s post test was administered to assess the effectiveness of the Simulation technique of GCS among nursing students.

Statistical design

Data were verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 20.0) was used. Descriptive statistics were applied (e.g. ,mean, standard deviation, frequency and percentages). Test of significance (chi square and paired t test) was applied to test the study hypothesis.

5. FINDINGS:

Section A: Analysis of Demographic variables.

Majority of (53%) nursing students were in the age group of 18-20 years, while (44%) are from the age group of 21-23 years and while remaining (3%) are from the age group of 24-26 years. The highest percentages (87%) of nursing students were female while only (17%) are male. Maximum (76%) of nursing students belongs from the B.Sc Nursing, (14%) of nursing students belongs from the PBBSc and (10%) of nursing students belongs from the G.N.M. Majority were having (30 %) studying in 4 year, while (23%) nursing students were having 2 year and 3 year in study, while (10%) nursing students were having 3 year GNM,while (7%) nursing students were having 2 year PBBSc and 1 year PBBSc in study Majority (76%) were living in a urban area and (24%) were living in a rural area.

Section B: Analysis of pre test and post test score of knowledge and practice Regarding GCS.

Comparison of pre-test and post-test knowledge score of nursing students N=150

Variable	Pre test	Mean	Mean Difference	Std. Deviation	t- Value
Knowledge regarding GCS	Pre-test	10.21	5.48	6.50266	16.52
	Post-Test	15.69		3.34082	

* Significant at 0.05 level *t (0.05, 149df) =1.98

The comparison between pre-test and post-test shows score of the respondent. It is evident from the above table, overall pre-test mean of knowledge is (10.21). After administering SOP the score of the same group has increased up to (15.69). The mean difference between pre-test and post-test is (5.48) which show the positive impact of the study. Standard deviation of pre-test score was (6.50) while the standard deviation score for same group has decreased up to (3.34) after providing SOP which shows the effectiveness of Tool. The calculated "t" value (16.52) is greater than the tabulated "t" value at 0.05 level. Data shows there is significant difference between pre-test and post-test level of knowledge score.

Comparison of pre-test and post-test practice score of nursing students N=150

Variable		Mean	Mean Difference	Std. Deviation	t- Value
Practice score regarding GCS	Pre-test	8.85	7.93	0.36152	30.695
	Post-Test	16.78		0.34815	

* Significant at 0.05 level *t (0.05, 149df) =1.98

The comparison between pre-test and post-test shows score of the respondent. It is evident from the above table, overall pre-test mean of practice is (8.85). After administering SOP the practice score of the same group has increased up to (16.78). The mean difference between pre-test and post-test is (7.93) which show the positive impact of the study. Standard deviation of pre-test score was (0.36) while the standard deviation score for same group has decreased up to (0.34) after providing Simulation technique on GCS. Which shows the effectiveness of Tool. The calculated "t" value (30.69) is greater than the tabulated "t" value at 0.05 level. Data shows there is significant difference between pre-test and post-test practice score.

6. DISCUSSION:

The aim of the study was conducted to evaluate the effectiveness of GCS on knowledge and practice regarding Simulation technique among nursing students. It was found nursing students had inadequate knowledge and practice regarding GCS and simulation technique is effective to improve the knowledge and bring a good practice towards GCS score.

Various evidence show the effectiveness of GCS in improving knowledge and practice regarding urinary catheterization. The nursing students are having lack of knowledge regarding GCS, so it is important that health care provider should provide the knowledge regarding GCS.

7. RECOMMENDATIONS:

Based on the findings of the present study recommendation offered for the future study:

- The similar study can be conducted on larger sample this will provide the valuable evidence in the area of practice.
- The similar study can be done in different college.
- The study can be conducted to assess nursing student's knowledge regarding GCS procedure.
- The study can be conducted only in critical areas.

8. CONCLUSION:

This study has dealt with the analysis and interpretation of the data collected from 150 nursing students. Both descriptive and inferential statistics were used to analyse the data. The analysis has been recognized and presented under various sections like description of demographic variable, comparison of pre-test and post-test knowledge and practice score, description of pre-test and post-test knowledge and practice score, association between the pre-test knowledge and practice score with selective demographical variables. It is found that post-test knowledge and practice score is higher than the pre-test score. So, it indicate effective outcome of simulation technique on GCS among nursing students. Pre-test knowledge and practice score were partially associated with selected demographical variables.

CONFLICTS OF INTEREST:

- The authors declare that there is no conflict of interest statement.

SOURCE OF FUNDING:

- Researchers used their own fund for their research.

ETHICAL CLEARANCE:

- Ethical clearance for this UG research project was obtained from the ethical committee SVIEC of Sumandeep Vidyapeeth deemed to beUniversity.

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