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RESEARCH ARTICLE

# Effectiveness of Simulation-Based Education on Knowledge, Attitude and Practice Towards the Management of Selected Psychiatric Emergencies Among Undergraduate Nursing Students

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Abstract: ***Objective***: The present study is aimed to assess the effectiveness of simulation-based education on knowledge, attitude, and practice towards the management of selected psychiatric emergencies among undergraduate nursing students in Chennai. Methodology: The investigator has employed Wiedenbach's Helping Art of Clinical Nursing Theory to interpret the conceptual framework. Pre-experimental one group pre-test-post-test research design was adopted for the study. A total of 47 undergraduate nursing students were involved in this study. The investigator used semi-structured questionnaire to assess the demographic variables, Structured questionnaire to assess the knowledge on selected psychiatric emergencies, 4-Point Likert rating scale to assess the attitude on selected psychiatric emergencies, and through OSCE, the practice on selected psychiatric emergencies was assessed. Pilot study was conducted using test- retest method, and the r-value was high (0.80) using Karl's Pearson correlation coefficient. Hence, the tool was considered to be reliable, and feasible for proceeding with the main study. Results: The analysis revealed that the frequency and percentage distribution of demographic variables, almost 50% of them belongs to 15 to 20 years age group and 21 to 25 years age group each. While majority of them in the study group were females (63%), nearly 70% had their school education in English. It is found that majority of the samples, 46 (97.9%), had inadequate knowledge in the pre-test, but 30 (63.8%) who had moderately adequate knowledge in the post- test. With regards to the level of attitude, majority of them had positive attitude in both the pre-test and post-test at 28 (59.6%) and 40 (85.1%), respectively. It is also revealed that between 93% to 98% of them got poor practice score in the pre-test, but in the post-test, 60% to 75% of them had good practice score. The calculated paired-t test value for knowledge was 13.984 which was statistically significant at $p<0.001$ level. While the calculated paired-t-test value for attitude was 3.594, the practice had its paired-t-test value in-between 23.854 to 27.923. Both the attitude and practice were statistically significant at $p<0.001$ level. The analysis also revealed that there was a positive correlation between knowledge and attitude, attitude and practice, practice, and knowledge. As the level of knowledge increased, the level of attitude and practice towards psychiatric emergencies also increased. It is also revealed that there was no association with the level of knowledge, attitude, and practice on selected psychiatric emergencies with the demographic variables of the undergraduate nursing students. Conclusion: The study concluded that the simulation-based education (SBE) was effective in improving the knowledge, attitude, and practice (KAP) towards the management of selected psychiatric emergencies. The study recommended that the utilization of SBE can be exclusively included in Mental health nursing (MHN) curriculum as a part to inculcate strongly positive KAP towards any psychiatric conditions.

Keywords: Psychiatric emergencies, Medical treatment, Knowledge, Attitude, Practice.

## INTRODUCTION

In January 2024, India's population reached 1.44 billion.1 197.3 million individuals experienced mental health issues in 2017 alone, affecting approximately one in seven Indians. Furthermore, since 1990, the proportionate share of mental health disorders in India's overall disease burden has almost doubled.2 Hospital emergency department receives many patients with psychiatric disorders (Grover, et al., 2023), and the most frequently visited patients are suffering secondary to agitation, aggression, suicidal behaviour, substance withdrawal, intoxication, panic attacks, dissociative disorders, psychosocial crisis, toxidromes (neuroleptic malignant syndrome, serotonin syndrome, anticholinergic syndrome), Medication withdrawal conditions, such as antidepressant withdrawal syndrome, catatonia due to withdrawal of antipsychotics, and benzodiazepines.3 The largest portion of patients referred from emergency department to Psychiatric emergency facility had their provisional diagnoses related to neurotic, stress-related, and somatoform disorders (Naskar, et al., 2019). The emergency healthcare providers ought to receive prompt training on common psychiatric disorders as the proportion of patients visiting the emergency healthcare facility is on the rise.4 Nursing students perceive these mentally ill patients as dangerous, abnormal, not concerned and they are not different from others (Sukyong son, et al., 2020)5. Nursing students' also experience

communication barrier with patients who have mental health disorder, and therefore, nurse-patient communication skill is the first step in improving the psychiatric clinical practice (Yıldız E., 2019)6. Simulation decreases nursing students' anxiety prior to communication with mentally ill patients, and therefore, exposing the nursing students to simulation-based education before they communicate with mentally-ill patients reduce their anxiety level (Janene, et al., 2013)7. Moreover, standardized patient simulation significantly improves the confidence and satisfaction level of the student nurses before their mental health clinical postings (Yong-Shian, G. O. H., et al., 2016)8. Healthcare simulation also plays a pivotal role in enhancing the knowledge, skills, and attitudes among the healthcare professionals of all levels. Furthermore, it helps the students to engage with, and experience a real hospital environment which greatly minimizes the likelihood of committing mistakes when carrying out their clinical duties (Koukourikos, et al., 2021)9.

Therefore, the investigator has decided to incorporate simulation-based education in this research to create real-life scenarios, in order to teach nursing students prior to their exposure to mental health clinical postings. The current study is aimed to assess and compare the pre and post-test level of knowledge, attitude, and practice towards the management of selected psychiatric emergencies among undergraduate nursing students, 2) determine the effectiveness of simulation-based education towards the management of selected psychiatric emergencies among undergraduate nursing students, 3) correlate between knowledge, attitude, and practice towards the management of selected psychiatric emergencies among undergraduate nursing students, 4) associate the mean difference level of knowledge, attitude, and practice towards the management of selected psychiatric emergencies among undergraduate nursing students.

# MATERIALS AND METHODS

**Research approach: research design**

Quantitative research approach is used for this study to determine the effectiveness of simulation-based education on knowledge, attitude, and practice towards the management of selected psychiatric emergencies among undergraduate nursing students in Chennai. Research design refers to the overall strategy that is chosen to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem (Thakur, H., 2021). Research design aligns methods with research objectives and dictates appropriate data analysis. It encompasses decisions on research goals, primary or secondary research, sampling techniques, data collection procedures, and analysis methods (McCombes, S., 2023). Pre-experimental one group pre-test - post-test research design was adopted for this study.

**Effectiveness of simulation-based education on knowledge, attitude, and practice on selected psychiatric emergencies**

| Group | Pre-Test | Intervention | Post-Test |
|---|---|---|---|
| Study group | O1 | X | O2 |

O1 – Pre-test was done for the students involved in the study on selected psychiatric emergencies; X – Students was be given a lecture using PowerPoint presentation which was followed by a Simulation based education training on four selected psychiatric emergencies; O2 – Post-test was done for the students involved in the study on selected psychiatric emergencies.

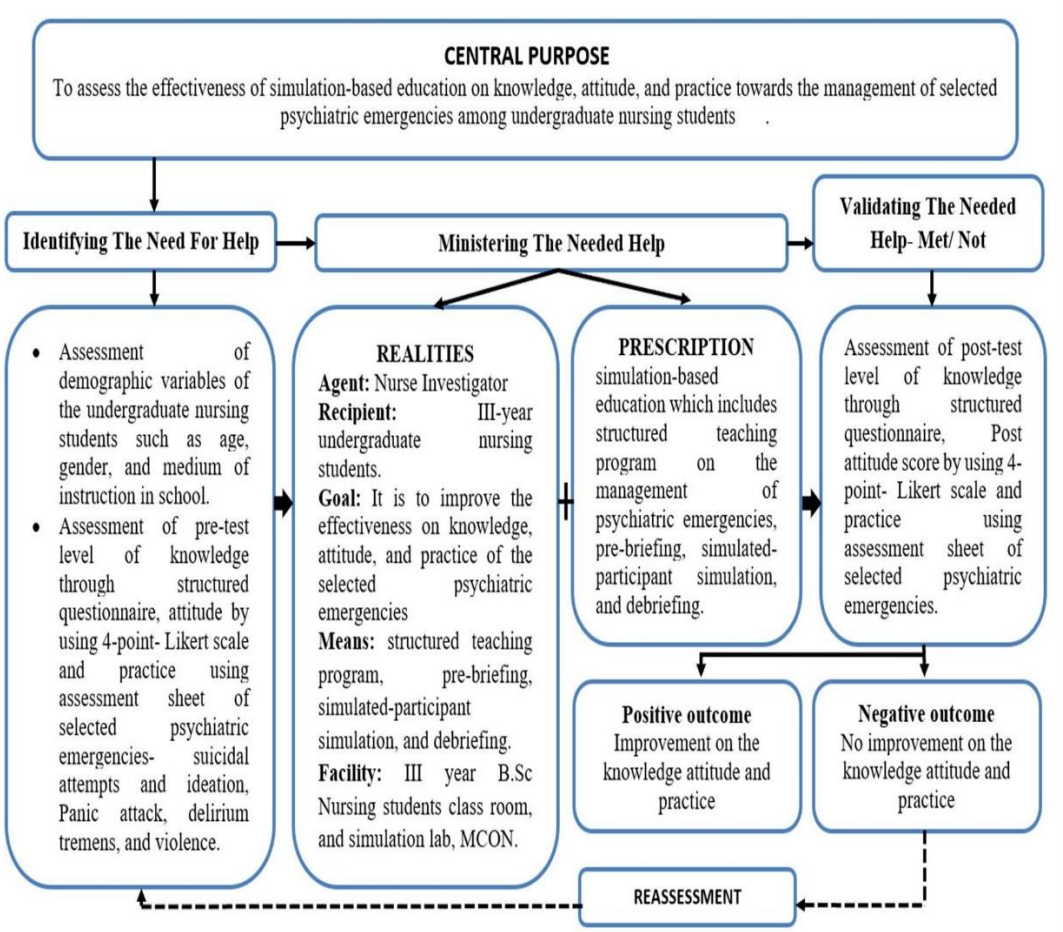


**FIG. 1: CONCEPTUAL FRAMEWORK BASED ON MODIFIED WIEDENBACK'S HELPING ART OF CLINICAL NURSING THEORY**

**Variables**
**Independent variable:** Simulation-based education
**Dependent variables:** Knowledge, attitude, and practice
**Demographic variables:** Age, Gender, and medium of instruction in school

The study was conducted in III-year undergraduate nursing students' classroom, and simulation lab in Meenakshi College of Nursing, Chennai. The setting was chosen for data collection feasibility, and approval by the management was obtained. The college offers bachelor's in nursing, post-basic bachelor's in nursing, and master's in nursing. The college have students enrolled to their maximum capacity, as per the approval of the Indian Nursing Council (INC).

**Target population and sample**
In this study, the target population are all the students studying III-year bachelor's degree in nursing, in MCON, Chennai. All students studying III- year bachelor's degree in nursing, in MCON, Chennai, are selected as samples for the study. The total sample size was 47 students who studied III-year bachelor's degree in nursing, in MCON, Chennai. Sampling technique refers to the process of selecting a group of population, events, behaviour, or other elements that are representative of the population being studied. After careful consideration, non-probability purposive sampling technique was used for sampling.

**Criteria for sample selection**
**Inclusion criteria:** Students who were studying undergraduate nursing in Meenakshi college of nursing. Students who studied B.Sc. Nursing III year.

**Exclusion criteria:** No students are excluded, except if they are absent due to unforeseen circumstances.

**Development and description of the tool:**

The tools for data collection are developed and described by the primary investigator, under the supervision of research guide. The data collection tools employed in this study consists of four sections.

**Section A:**
It contains semi-structured questionnaire to assess the demographic variables of the students involved in the study. It contains 3 items- Age, Gender and medium of instruction in school.

**Section B:**
This section contains structured questionnaire to assess the knowledge on selected psychiatric emergencies. It contains 25 questions, and each question carries one mark. The minimum and maximum scores were 0 and 25, respectively. This section is interpreted as follows,

| Marks | Level of knowledge |
|---|---|
| 0-33% | Inadequate Knowledge |
| 34-66% | Moderately adequate Knowledge |
| 67-100% | Adequate knowledge |

**Section C:**
This section contains 4- Point- Likert rating scale to assess the attitude of the students involved in the study. It contains 12 items rated as disagree, partially disagree, partially agree, and agree, and they are scored as 0,1,2,3, respectively. This section is interpreted as follows,

| Marks | Level of attitude |
|---|---|
| 0-33% | Negative attitude |
| 34-66% | Neutral attitude |
| 67-100% | Positive attitude |

**Section D:**
It contains the practice scoring sheet to assess the practice of the students involved in the study. If a specific practice is documented by the student following his/her practice, that assessment carried 1 mark, or else it was interpreted as 0. The minimum and maximum scores for each practice scoring sheet was 0 and 10, respectively. A total of 10 practice assessment points were there for each practice scoring sheet. There were 4 scoring sheets in this section as follows,

- OSCE sheet for acute suicidal ideation and attempts.
- OSCE sheet for Panic attack.
- OSCE sheet for delirium tremens.
- OSCE sheet for violent behaviour.
- The scores in this section are interpreted as follows,

| Marks | Level of practice |
|---|---|
| 0-33% | Poor Practice score |
| 34-66% | Average Practice score |
| 67-100% | Good Practice score |

**Content validity of the tool**
Content validity refers to the extent to which a measurement instrument, such as a test or survey, accurately represents all aspects of the construct it is intended to measure. It evaluates whether the items in the instrument cover the full range of the construct (Nikolopoulou, K., 2023). The content of the instrument was validated by three nursing experts specialized in psychiatric nursing- Dr. D. Alfred Solomon, Assistant professor, Saveetha college of nursing, Mrs. M. Rejili Grace Joy, Associate Professor, Panimalar college of nursing, and Mrs. P. Saranya, reader, Madha college of nursing. Minor suggestion regarding inclusion of demographic variable, and scoring of question was made in the tool. The experts' suggestion was incorporated in the tool which was finalized and used for the main study.

**Reliability of the tool**
Reliability in research refers to the degree to which a method or tool produces stable and consistent results (Dudovskiy, J., Retrived April 4, 2024). The reliability of the tool was assessed by using test-retest method. The correlation coefficient value was found using Karl Pearson's method (r-value= 0.80) which showed positive correlation. Hence, the tools were found to be reliable to proceed for the main study.
2.5. Ethical consideration

Ethical consideration refers to a system of moral values that is concerned with degree to which research procedures adheres to professional, legal and social obligation to the study participants (Polit & Hungler, 1999). The proposed study was approved by Institutional Review Board (IRB), Meenakshi College of Nursing after being scrutinized for ethical issues. Approval was obtained from the principal, Meenakshi college of Nursing, Chennai. A brief introduction about self and the study was given. Subjects were explained clearly about the study purpose and consent was obtained before data collection. Confidentiality about the responses was assured.

**Pilot study**

A pilot study, also known as a feasibility study, is a small-scale preliminary study conducted before the main research to check the feasibility or improve the research design. Pilot studies can help identify design issues, evaluate a study's feasibility, practicality, resources, time, and cost before the main research is conducted (Simkus, J., 2023). The pilot study was conducted on 08-02-2024. The investigator got formal permission, and conducted pilot study in Arulmigu Meenakshi college of Nursing, Kanchipuram after the formal consent was obtained. A brief introduction about the study and self was given. The purpose of the study was explained and confidentiality was maintained. Informed consent was obtained from each sample. The investigator selected 5 samples by using purposive sampling technique. The pre-test data was collected using the tools prepared- structured knowledge questionnaire, 4-point likert scale for attitude, and OSCE sheet for the level of practice. This was followed by structured teaching program and simulation-based education. Post-test was conducted on 17-02-2024. The study revealed positive correlation r = 0.8. There was no practical difficulty met by the investigator and the tool was considered to be reliable. Hence, the same procedure was decided to be followed in the main study.

**Data collection**

Data collection is a systematic process of gathering observations or measurements. It allows to gain first-hand knowledge and original insights into your research problem, whether you are performing research for business, governmental, or academic purposes (Bhandari, P., 2023). Formal Permission was obtained from the principal, Meenakshi college of Nursing, Chennai for conducting the research. The investigator has selected 47 students by purposive sampling technique. Brief introduction about self and study was given, and the confidentiality of the responses were assured. The investigator obtained written consent from the participants, and the data collection was limited to a period of 4 weeks from 26-02-2024 to 21-03-2024. Throughout the study, the investigator conducted simulation for 12 minutes for each student- 5 minutes of simulation and 7 minutes of debriefing. Pre-briefing was done to the participants before the simulation was conducted. The intervention plan of the study is listed below.

**Data analysis**

Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense, and recap, and evaluate data. The collected data was analyzed by using descriptive and inferential statistics. Frequency and percentage distribution were used to describe the demographic variables among the students. Mean and standard deviation were used to the pre-test and post-test. Paired 't' test, was used to compare pre-test, and post-test score among the students. Pearson correlation coefficient was used to study the correlation between the knowledge, attitude, and practice. ANOVA was used to assess the association of level of knowledge, attitude, and practice on selected psychiatric emergencies with demographic variables of the undergraduate nursing students.

**Intervention plan**

| Date | Activity done | Psychiatric emergency Condition | No. Of participants Completed |
|---|---|---|---|
| 26-02-2024 | Consent obtained. | - | 47 |
| | Demographic variables collected | | |
| | Pre-test- Knowledge assessment, and | - | 47 |
| | attitude assessment completed. | Suicidal thoughts and ideation, Panic | 47 |
| | PowerPoint Presentation on selected | attack, Delirium tremens, Violence and | |
| | psychiatric emergencies delivered. | aggression Suicidal thoughts and | |
| | Pre-test- practice assessment | ideation, Panic attack, Delirium tremens, | |
| | conducted. | Violence and aggression | 47 |
| | | Suicidal thoughts and ideation | |
| 27-02-2024 | Pre-test- practice assessment conducted. | Suicidal thoughts and ideation | 22 |

| | | | | | |
|---|---|---|---|---|---|
| 28-02-2024 | Pre-test-conducted | practice | assessment | Panic Attack | 25 |
| 29-02-2024 | Pre-test-conducted | practice | assessment | Panic Attack | 22 |
| 01-03-2024 | Pre-test-conducted | practice | assessment | Delirium Tremens | 25 |
| 02-03-2024 | Pre-test-conducted | practice | assessment | Delirium Tremens | 22 |
| 04-03-2024 | Pre-test-conducted | practice | assessment | Violence and aggression | 25 |
| 05-03-2024 | Pre-test-conducted | practice | assessment | Violence and aggression | 22 |
| 13-03-2024 | Post-test-and attitude assessment completed. Post-test-conducted | Knowledge | assessment, practice assessment | Suicidal thoughts and ideation, Panic attack, Delirium tremens, Violence and aggression Suicidal thoughts and ideation | 47 |
| 14-03-2024 | Post-test-conducted | practice | assessment | Suicidal thoughts and ideation | 22 |
| 15-03-2024 | Post-test-conducted | practice | assessment | Panic Attack | 25 |
| 16-03-2024 | Post-test-conducted | practice | assessment | Panic Attack | 22 |
| 18-03-2024 | Post-test-conducted | practice | assessment | Delirium Tremens | 25 |
| 19-03-2024 | Post-test-conducted | practice | assessment | Delirium Tremens | 22 |
| 20-03-2024 | Post-test-conducted | practice | assessment | Violence and aggression | 25 |
| 21-03-2024 | Post-test-conducted | practice | assessment | Violence and aggression | 22 |

# RESULTS

**Table 4. Frequency and percentage distribution of background variables (N= 47)**

| Background Variables | Frequency, n | Percentage, % |
|---|---|---|
| Age | | |
| 15-20 | 22 | 46.8 |
| 21-25 | 25 | 53.2 |
| Gender | | |
| Male | 17 | 36.2 |
| Female | 30 | 63.8 |
| Prefer not to say | 0 | 0.0 |
| Medium of Instruction in school | | |
| English | 33 | 70.2 |
| Tamil | 11 | 23.4 |
| Malayalam | 1 | 2.1 |
| Hindi | 2 | 4.3 |

The above table represents the frequency and percentage distribution of background variables of the III-year B.Sc Nursing students. With regards to the age, out of 47 samples, 22 (46.8%) belongs to 15 to 20-years age group, and the remaining 25 (53.2%) were 21 to 25-years-old. Considering the gender, 17 (36.2%) of the samples were male, and the females constituted 30 (63.8%). Regarding the medium of instruction in school, while 33 (70.2%) samples had their school education in English medium, 11 (23.4%), 1 (2.1%), and 2 (4.3%) had their education in Tamil, Malayalam, and Hindi medium, respectively.

**Table 5. Frequency and percentage distribution of pre-test and post-test level of knowledge of selected psychiatric emergencies (N= 47)**

| Level of Knowledge | Pre-test | | Post-test | |
|---|---|---|---|---|
| | Frequency | % | Frequency | % |
| Inadequate knowledge | 46 | 97.9 | 17 | 36.2 |
| Moderately Adequate knowledge | 1 | 2.1 | 30 | 63.8 |
| Adequate knowledge | 0 | 0 | 0 | 0 |
| Total | 47 | 100 | 47 | 100 |

The above table represents the frequency and percentage distribution of pre- test and post-test level of knowledge of selected psychiatric emergencies. The table shows that majority of the samples, 46 (97.9%), had inadequate knowledge as compared to 1 (2.1%) who had moderately adequate knowledge, in pre- test. In post-test, the results showed that 30 (63.8%) had moderately adequate knowledge, and 17 (36.2%) had inadequate knowledge. It is evident from table 3 that there was a moderate change in the level of knowledge among undergraduate nursing students in the post-test.

**Table 6. Frequency and percentage distribution of pre-test and post-test level of attitude of selected psychiatric emergencies (N= 47)**

| Level of Attitude | Pre-test | | Post test | |
|---|---|---|---|---|
| | Frequency | % | Frequency | % |
| Negative attitude | 0 | 0 | 0 | 0 |
| Neutral attitude | 19 | 40.4 | 7 | 14.9 |
| Positive Attitude | 28 | 59.6 | 40 | 85.1 |
| Total | 47 | 100 | 47 | 100 |

The above table represents the frequency and percentage distribution of pre- test and post-test level of knowledge of selected psychiatric emergencies. The table 3 shows that there was a significant change in the level of attitude among undergraduate nursing students. In Pre-test, the results showed that 19 (40.4%) samples had moderate attitude as compared to 28 (59.6%) who had good attitude. In post-test, the results showed that only 7 (14.9%) had moderate attitude, and 40 (85.1%) had good attitude. In both pre-test and post-test, none had poor attitude.

**Table 7. Frequency and percentage distribution of the pre-test and post-test level of practice of selected psychiatric emergencies (N= 47)**

| Level of Practice on Suicide attempt and ideation | Pre-test | | Post-test | |
|---|---|---|---|---|
| | Frequency | % | Frequency | % |
| Poor Practice score | 44 | 93.6 | 0 | 0 |
| Average Practice score | 3 | 6.4 | 12 | 25.5 |
| Good Practice score | 0 | 0 | 35 | 74.5 |
| Total | 47 | 100 | 47 | 100 |
| Panic attack | Pre-test | | Post-test | |
| | Frequency | % | Frequency | % |
| Poor Practice Score | 45 | 95.7 | 0 | 0 |
| Average Practice Score | 2 | 4.3 | 15 | 31.9 |
| Good Practice Score | 0 | 0 | 32 | 68.1 |
| Total | 47 | 100 | 47 | 100 |
| Delirium Tremens | Pre-test | | Post-test | |
| | Frequency | % | Frequency | % |

| | | | | |
|---|---|---|---|---|
| Poor Practice Score | 46 | 97.9 | 0 | 0 |
| Average Practice Score | 1 | 2.1 | 19 | 40.4 |
| Good Practice Score | 0 | 0 | 28 | 59.6 |
| Total | 47 | 100 | 47 | 100 |
| Violence & Aggression | Pre-test | | Post-test | |
| | Frequency | % | Frequency | % |
| Poor Practice Score | 45 | 95.7 | 0 | 0 |
| Average Practice Score | 2 | 4.3 | 19 | 40.4 |
| Good Practice Score | 0 | 0 | 28 | 59.6 |
| Total | 47 | 100 | 47 | 100 |
| Overall Level of Practice | Pre-test | | Post-test | |
| | Frequency | % | Frequency | % |
| Poor Practice Score | 47 | 100 | 0 | 0 |
| Average Practice score | 0 | 0 | 0 | 0 |
| Good Practice Score | 0 | 0 | 47 | 100 |
| Total | 47 | 100 | 47 | 100 |

The above table represents the frequency and percentage distribution of the pre- test and post-test level of practice of selected psychiatric emergencies. With regards to suicidal attempt and ideation in table 4, there was a significant change in the level of practice among undergraduate nursing students. In the pre-test, the results showed that 44 (93.6%) samples had poor practice score as compared to 3 (6.4%) who had average practice score. None had good practice score in the pre-test. In the post-test, the results showed that none had poor practice score, whereas 12 (25.5%) had average practice score, and 35 (74.5%) had good practice score. With regards to panic attack, there was a significant change in the level of practice among undergraduate nursing students. In the pre-test, the results showed that 45 (95.7%) samples had poor practice score as compared to 2 (4.3%) who had average practice score. None had good practice score in the pre-test. In the post-test, the results showed that none had poor practice score, whereas 15 (31.9%) had average practice score, and 32 (68.1%) had good practice score. With regards to delirium tremens, there was a significant change in the level of practice among undergraduate nursing students. In the pre-test, the results showed that 46 (97.9%) samples had poor practice as compared to 1 (2.1%) who had average practice score. None had good practice score in the pre-test. In the post-test, the results showed that none had poor practice score, whereas 19 (40.4%) had average practice score, and 28 (59.6%) had good practice score. With regards to violence and aggression there was a significant change in the level of practice among undergraduate nursing students. In the pre-test, the results showed that 45 (95.7%) samples had poor practice as compared to 2 (4.3%) who had average practice score. None had good practice score in the pre-test. In the post-test, the results showed that none had poor practice score, whereas 19 (40.4%) had average practice score, and 28 (59.6%) had good practice score. With regards to the overall level of practice, there was a significant change among the undergraduate nursing students. In the pre-test, the results showed that 47 (100%) samples had poor practice. None had average or good practice score in the pre- test. In the post-test, the results showed that none had poor or average practice score, whereas 47 (100%) had good practice score.

**Table 8. Mean and standard deviation of pre-test and post-test level of knowledge of selected psychiatric emergencies among the study group (N= 47)**

| Descriptive Statistics | Knowledge score | | |
|---|---|---|---|
| | Pre-test | Post test | Difference (post-pre) |
| Mean | 7.57 | 13.09 | 5.51 |
| Standard Deviation | 2.39 | 1.87 | 2.70 |
| Range: Minimum Maximum | | | Paired t test =13.984 |
| | 1 | 10 | and p = 0.000*** |
| | 13 | 17 | |

Note: *** - p < 0.001 Level of Significant

The above table represents the comparison of mean score and standard deviation of pre-test and post-test level of knowledge of selected psychiatric emergencies in the study group. With regards to knowledge, the mean of knowledge score in pre-test was 7.57 with standard deviation 2.39, and the minimum and maximum scores were 1 and 13, respectively. The mean of knowledge score in post-test was 13.09 with standard deviation 1.87, and the minimum and maximum scores were 10 and 17, respectively. The calculated paired-t test value was 13.984 which was statistically significant at p<0.001 level.

**Table 9. Mean and standard deviation of pre-test and post-test level of attitude of selected psychiatric emergencies among the study group (N= 47)**

| Descriptive Statistics | Attitude score | | |
|---|---|---|---|
| | Pre-test | Post-test | Difference (post-pre) |
| Mean | 26.98 | 29.68 | 2.70 |
| Standard Deviation | 3.45 | 3.43 | 5.15 |
| Range: | | | |
| Minimum | 19 | 21 | Paired t test = 3.594 |
| Maximum | 34 | 34 | And p = 0.001*** |
| Range: | | | |
| Minimum | 19 | 21 | Paired t test = 3.594 |
| Maximum | 34 | 34 | And p = 0.001*** |

Note: *** - p < 0.001 Level of Significant

The above table represents the comparison of mean score and standard deviation of pre-test and post-test level of attitude of selected psychiatric emergencies among the undergraduate nursing students. With regards to attitude, the mean of attitude score in pre-test was 26.98 with standard deviation 3.45, and the minimum and maximum scores were 19 and 34, respectively. The mean of attitude score in post-test was 29.68 with standard deviation 3.43, and the minimum and maximum scores were 21 and 34, respectively. The calculated paired-t test value was 3.594 which was statistically significant at p < 0.001 level.

**Table 10. Mean and standard deviation of the pre-test and post-test level of practice of selected psychiatric emergencies in the study group (N= 47)**

| Descriptive Statistics | Suicidal attempt | | Difference (post-pre) |
|---|---|---|---|
| | Pre-test | Post-test | |
| Mean | 2.94 | 8.19 | 5.255 |
| Standard Deviation | 0.99 | 0.88 | 1.51 |
| Range: Minimum Maximum | 1<br>5 | 7<br>10 | Paired t test =23.854<br>and p = 0.000 *** |

| Descriptive Statistics | Panic attack | | Difference (post-pre) |
|---|---|---|---|
| | Pre-test | Post-test | |
| Mean | 2.83 | 8.13 | 5.298 |
| Standard Deviation | 0.98 | 0.90 | 1.30 |
| Range: Minimum Maximum | 1<br>5 | 7<br>10 | Paired t test = 27.923<br>and p = 0.000*** |

| Descriptive Statistics | Delirium Tremens | | |
|---|---|---|---|
| | Pre-test | Post-test | Difference (post-pre) |
| Mean | 2.51 | 7.89 | 5.383 |
| Standard Deviation | 0.93 | 0.84 | 1.05 |
| Range: Minimum Maximum | 1<br>5 | 7<br>9 | Paired t test = 26.133<br>and p = 0.000*** |

| Descriptive Statistics | Violence and Aggression | | |
|---|---|---|---|
| | Pre-test | Post-test | Difference (post-pre) |
| Mean | 2.81 | 7.94 | 5.128 |
| Standard Deviation | 0.99 | 0.87 | 1.34 |

| | | | |
|---|---|---|---|
| Range: Minimum Maximum | 1<br>5 | 7<br>9 | Paired t test = 26.133<br>and p = 0.000*** |
| Descriptive Statistics | Overall Practice | | |
| | Pre-test | Post-test | Difference (post-pre) |
| Mean | 2.81 | 7.94 | 21.064 |
| Standard Deviation | 0.99 | 0.87 | 2.61 |
| Range: Minimum Maximum | 1<br>5 | 7<br>9 | Paired t test = 55.377<br>and p = 0.000 *** |

Note: *** - p < 0.001 Level of Significant

The above table represents the comparison of mean score and standard deviation of the pre-test and post-test level of practice of selected psychiatric emergencies in the study group. With regards to practice on suicidal attempt and ideation, the mean of practice score in pre-test was 2.94 with standard deviation 0.99, and the minimum and maximum scores were 1 and 5, respectively. The mean of practice score in the post-test was 8.19 with standard deviation 0.88, and the minimum and maximum scores were 7 and 10, respectively. The calculated paired-t test value was 23.854 which was statistically significant at p<0.001 level. With regards to practice on panic attack, the mean of practice score in pre-test was 2.83 with standard deviation 0.98, and the minimum and maximum scores were 1 and 5, respectively. The mean of practice score in the post-test was 8.13 with standard deviation 0.90, and the minimum and maximum scores were 7 and 10, respectively. The calculated paired-t test value was 27.923 which was statistically significant at p<0.001 level. With regards to the delirium tremens, the mean of practice score in the pre-test was 2.51 with standard deviation 0.93, and the minimum and maximum scores were 1 and 5, respectively. The mean of practice score in the post-test was 7.89 with standard deviation 0.84, and the minimum and maximum scores were 7 and 9, respectively. The calculated paired-t test value was 26.133 which was statistically significant at p<0.001 level. With regards to violence and aggression, the mean of practice score in the pre- test was 2.81 with standard deviation 0.99, and the minimum and maximum scores were 1 and 5, respectively. The mean of practice score in the post-test was 7.94 with standard deviation 0.87, and the minimum and maximum scores were 7 and 9, respectively. The calculated paired-t test value was 26.133 which was statistically significant at p<0.001 level. With regards to the overall practice, the mean of practice score in the pre-test was 2.81 with standard deviation 0.99, and the minimum and maximum scores were 1 and 5, respectively. The mean of practice score in the post-test was 7.94 with standard deviation 0.87, and the minimum and maximum scores were 7 and 9, respectively. The calculated paired-t test value was 55.377 which was statistically significant at p < 0.001 level.

**Table 11. Correlation between the Knowledge, Attitude and Practice on selected Psychiatric Emergencies among Undergraduate Nursing Students in Pre-test and Post test in the study group (N= 47)**

| Variables | Correlation value | | | |
|---|---|---|---|---|
| | Pre-test | | Post test | |
| | r value | p value | r value | p value |
| Knowledge Vs Attitude | r = 0.020 | p = 0.894<br>Not Significant | r = 0.126 | p = 0.399<br>* |
| Knowledge Vs Practice | r=-0.051 | p = 0.732<br>Not Significant | r = -0.1496 | p = 0.327<br>* |
| Attitude Vs Practice | r =0.090 | p = 0.547<br>Not Significant | r = -0.349 | p = 0.016<br>* |

Note: * - p < 0.05 Level of Significant

The above table represents the correlation between knowledge, practice, and attitude on selected psychiatric emergencies in pre-test and post-test in the study group. The analysis revealed that there is a positive correlation between knowledge

and attitude, attitude and practice, practice and knowledge. As the level of knowledge increased, the level of attitude and practice towards psychiatric emergencies also increased.

**Table 12. Association of Level of Knowledge on selected Psychiatric Emergencies with Demographic Variables of Undergraduate Nursing Students, in Pre-test (N= 47)**

| Demographic variables | Knowledge Score | | | F and t value and P value |
|---|---|---|---|---|
| | No. | Mean | SD | |
| 1. Age | | | | |
| 15-20 | 22 | 7.36 | 2.68 | t = 0.562 |
| 21-25 | 25 | 7.76 | 2.15 | p = 0.577 (N.S) |
| 2. Gender | | | | |
| Male | 17 | 7.29 | 2.14 | t = 0.600 |
| Female | 30 | 7.73 | 2.55 | p = 0.551 (N.S) |
| 3. Medium of instruction in school | | | | |
| English | 33 | 7.91 | 2.39 | F = 1.148 |
| Tamil | 11 | 6.55 | 2.46 | p = 0.341 (N.S) |
| Malayalam | 1 | 6.00 | 0.00 | |
| Hindi | 2 | 8.50 | 0.71 | |

Note: N.S. – Not Significant

The above table shows the association between level of knowledge on selected psychiatric emergencies with demographic variables of undergraduate nursing students, in pre-test. The analysis revealed that there was no significant association of pre-test with any of the background variables of undergraduate nursing students in the study.

**Table 13. Association of Level of Knowledge on selected Psychiatric Emergencies with Demographic Variables of Undergraduate Nursing Students, in Post-test (N= 47)**

| Demographic variables | Knowledge Score | | | F and t value and p value |
|---|---|---|---|---|
| | No. | Mean | SD | |
| 1. Age | | | | |
| a. 15-20 | 22 | 12.73 | 2.00 | t = 1.235 |
| b. 21-25 | 25 | 13.40 | 1.73 | p = 0.223 (N.S) |
| 2. Gender | | | | |
| a. Male | 17 | 13.00 | 1.77 | t = 0.232 |
| b. Female | 30 | 13.13 | 1.96 | p = 0.818 (N.S) |
| 3. Medium of Instruction in School | | | | |
| a. English | 33 | 13.18 | 1.94 | F = 1.969 |
| b. Tamil | 11 | 12.55 | 1.44 | p = 0.133 (N.S) |
| c. Malayalam | 1 | 11.00 | 0.00 | |
| d. Hindi | 2 | 15.50 | 0.71 | |

Note: N.S. – Not Significant

The above table shows the association between level of knowledge on selected psychiatric emergencies with demographic variables of undergraduate nursing students, in post-test. The analysis revealed that there was no significant association of post-test with any of the background variables of undergraduate nursing students in the study.

**Table 14. Association of Level of attitude on selected Psychiatric Emergencies with Demographic Variables of Undergraduate Nursing Students, in Pre-test N= 47**

| Demographic variables | Attitude Score | | | F and t value and p value |
|---|---|---|---|---|
| | No. | Mean | SD | |
| 1. Age | | | | |
| a. 15-20 | 22 | 27.27 | 3.47 | t = 0.544 |
| b. 21-25 | 25 | 26.72 | 3.48 | p = 0.589 (N.S) |
| 2. Gender | | | | |
| a. Male | 17 | 26.24 | 3.44 | t = 1.116 |
| b. Female | 30 | 27.40 | 3.44 | p = 0.271 (N.S) |
| 3. Medium of instruction in | | | | |
| School | 33 | 27.00 | 3.53 | F = 0.041 |
| a. English | 11 | 26.91 | 3.83 | p = 0.989 (N.S) |
| b. Tamil | 1 | 26.00 | 0.00 | |
| c. Malayalam | 2 | 27.50 | 0.71 | |
| d. Hindi | | | | |

Note: N.S. – Not Significant

The above table shows the association between level of attitude on selected psychiatric emergencies with demographic variables of undergraduate nursing students, in pre-test. The analysis revealed that there was no significant association of pre-test with any of the background variables of undergraduate nursing students in the study.

**Table 15. Association of Level of attitude on selected Psychiatric Emergencies with Demographic Variables of Undergraduate Nursing Students, in Post-test (N=47)**

| Demographic variables | Attitude Score | | | F and t value and p value |
|---|---|---|---|---|
| | No. | Mean | SD | |
| 1. Age | | | | |
| a. 15-20 | 22 | 29.14 | 3.90 | t = 1.020 |
| b. 21-25 | 25 | 30.16 | 2.97 | p = 0.313 (N.S) |
| 2. Gender | | | | |
| a. Male | 17 | 30.24 | 1.56 | t = 0.831 |
| b. Female | 30 | 29.37 | 4.13 | p = 0.411 (N.S) |
| 3. Medium of instruction in School | | | | |
| a. English | 33 | 29.82 | 3.50 | F = 0.638 |
| b. Tamil | 11 | 28.73 | 3.52 | p = 0.594 (N.S) |
| c. Malayalam | 1 | 31.00 | 0.00 | |
| d. Hindi | 2 | 32.00 | 1.41 | |

Note: N.S. – Not Significant

The above table shows the association between level of attitude on selected psychiatric emergencies with demographic variables of undergraduate nursing students, in post-test. The analysis revealed that there was no significant association of post-test with any of the background variables of undergraduate nursing students in the study.

**Table 16. Association of Level of practice on selected Psychiatric Emergencies with Demographic Variables of Undergraduate Nursing Students, in the pre-test (N=47)**

| Demographic variables | Practice Score | | | F and t value and P value |
|---|---|---|---|---|
| | No. | Mean | SD | |
| 1. Age | | | | |
| a. 15-20 | 22 | 11.45 | 2.39 | t = 1.095 |
| b. 21-25 | 25 | 10.76 | 1.96 | p = 0.280 (N.S) |
| 2. Gender | | | | |
| a. Male | 17 | 11.00 | 2.35 | t = 0.200 |
| b. Female | 30 | 11.13 | 2.11 | p = 0.843 (N.S) |
| 3. Medium of instruction in School | | | | |
| a. English | 33 | 10.85 | 2.17 | F = 0.754 |
| b. Tamil | 11 | 11.36 | 2.34 | p = 0.526 (N.S) |
| c. Malayalam | 1 | 12.00 | 0.00 | |
| d. Hindi | 2 | 13.00 | 1.41 | |

Note: * - p < 0.5, ** - p < 0.001 Level of Significant, N.S. - Not Significant

The above table shows the association between level of practice on selected psychiatric emergencies with demographic variables of undergraduate nursing students, in the pre-test. The analysis revealed that there was no significant association of the pre-test with any of the background variables of undergraduate nursing students in the study.

**Table 17. Association of Level of practice on selected Psychiatric Emergencies with Demographic Variables of Undergraduate Nursing Students, in the post-test (N=47)**

| Demographic variables | Practice Score | | | F and t value and p value |
|---|---|---|---|---|
| | No. | Mean | SD | |
| 1. Age | | | | |
| a. 15-20 | 22 | 32.14 | 1.61 | t = 0.562 |
| b. 21-25 | 25 | 32.16 | 1.38 | p = 0.577 (N.S) |
| 2. Gender | | | | |
| a. Male | 17 | 32.06 | 1.03 | t = -0.312 |
| b. Female | 30 | 32.20 | 1.69 | p = 0.765 (N.S) |
| 3. Medium of instruction in School | | | | |
| a. English | 33 | 32.18 | 1.55 | F = 0.132 |
| b. Tamil | 11 | 32.18 | 1.47 | p = 0.941 (N.S) |
| c. Malayalam | 1 | 32.00 | 0.00 | |
| d. Hindi | 2 | 31.50 | 0.71 | |

Note: N.S. – Not Significant

The above table shows the association between level of practice on selected psychiatric emergencies with demographic variables of undergraduate nursing students, in the post-test. The analysis revealed that there was no significant association of the post-test with any of the background variables of undergraduate nursing students in the study.

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## DISCUSSION

This chapter discusses the findings of the study derived from statistical analysis with its pertinence of the objectives and related literature of the study. The study aimed to assess the effectiveness of simulation-based education on knowledge, attitude and practice towards the management of selected psychiatric emergencies among undergraduate nursing students, in Chennai". The frequency and percentage distribution of demographic variables revealed that almost 50% of them belongs to 15 to 20 years age group and 21 to 25 years age group each. While majority of them in the study group were females (63%), nearly 70% had their school education in English. The analysis revealed that majority of the samples, 46 (97.9%), had inadequate knowledge in the pre-test when compared to 30 (63.8%) who had moderately adequate knowledge in the post-test. With regards to the level of attitude, majority of them had positive attitude in both the pre-test and post-test at 28 (59.6%) and 40 (85.1%), respectively. It is also revealed that between 93% to 98% of them got poor practice score in the pre-test, but in the post-test, 60% to 75% of them had good practice score. The findings of the study are supported by the study done by Awate, S. K., Chavan, H., & Raut, S. (2020) in a study to assess the knowledge regarding the nursing management of psychiatric emergencies among staff nurses. This study findings revealed that 66.66% of the nurses had poor knowledge, and only 33.33% demonstrated adequate knowledge towards the nursing management of psychiatric emergencies. Hypothesis 1 states that, "There is a significant difference between the pre and post-test level of Knowledge, attitude, and practice towards the management of psychiatric emergencies" was accepted at $P<0.001$ level of significance.

The analysis revealed that the calculated paired-t test value for knowledge was 13.984 which was statistically significant at $p<0.001$ level. While the calculated paired-t-test value for attitude was 3.594, the practice had its paired-t-test value in-between 23.854 to 27.923. Both the attitude and practice were statistically significant at $p<0.001$ level. The findings of the study are similar to the study done by Saraswathy et al., (2021) in "applying interprofessional simulation to improve knowledge, attitude and practice in hospital-acquired infection control among health professionals". The results revealed that the mean score of knowledge, attitude, and practice (KAP) among the study group have increased after the simulation-based education. Another study conducted by Marie-Aude Piot et.al., (2022) in a systematic review and meta-analysis also supported this study findings which concluded that the effectiveness of attitude, skills and behaviour have improved as a result of simulation training in psychiatric nursing. The analysis revealed that there is a positive correlation between knowledge and attitude, attitude and practice, practice, and knowledge. As the level of knowledge increased, the level of attitude and practice towards psychiatric emergencies also increased.

The analysis revealed that there was no association with the level of knowledge, attitude, and practice on selected psychiatric emergencies with the demographic variables of the undergraduate nursing students. The conceptual framework model adopted for the study was modified Wiedenback's helping art of clinical nursing theory. In this study, the need for help was identified by collecting the demographic variables of the undergraduate nursing students. Also, pre-test regarding level of knowledge through structured questionnaire, attitude by using 4-point- Likert scale, and practice using practice assessment sheet of selected psychiatric emergencies were collected. The investigator ministered the needed help by means of structured teaching program, pre-briefing, simulated- participant simulation, and debriefing for the III-year B.sc Nursing students in Meenakshi College of Nursing, Chennai. Following this, assessment of post-test level of knowledge through structured questionnaire, Post attitude score by using 4-point- Likert scale, and practice using practice assessment sheet of selected psychiatric emergencies were collected. Finally, the positive and negative outcome of the study were assessed. Assumption of the study that "Simulation based education may tend to increase the knowledge, attitude, and practice of the students towards the management of selected psychiatric emergencies was accepted". The result had proven that the overall knowledge, attitude, and practice of selected psychiatric emergencies have improved for the undergraduate nursing students in the study.

## CONCLUSION

The study concluded that the SBE was effective in improving the knowledge, attitude, and practice (KAP) towards the selected psychiatric emergencies. The study recommended that the utilization of SBE can be exclusively included in Mental health nursing (MHN) curriculum as a part to inculcate strong KAP towards any psychiatric conditions. The study can be conducted for other psychiatric emergencies for the student nurses. The study can be conducted for other disease conditions which require nurses or healthcare professionals' expertise. The study can be extended to any nursing or healthcare simulation education. The study can be conducted to a wider population by involving students from more than one college. The study may be conducted by having a control group and study group. The study can be conducted by incorporating other simulation methodology which are emerging with the technological advancements. The study can be conducted for the registered nurses as a quality improvement project for the benefit of the patients. Nursing students should be knowledgeable with positive attitude and expertise skills which taking care of patient with psychiatric emergencies. This should be nurtured properly right from

their college days, so that these student nurses, when entering the job-market would be competent to manage.

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