

“EFFECTIVENESS OF SKILL STATION TEACHING ON KNOWLEDGE AND PRACTICE OF COGNITIVE MENTAL STATUS EXAMINATION AMONG NURSING STUDENTS”

Shefali Samson Daruwal¹, Milka Devraj², Narayan Krishna Ghorpade³, Bahubali Jinnappa Geddugol^{4*}, Vivian Vinay Saler⁵, Aishwarya Laxman Mali⁶, Vivek Vikas Satput⁷

¹Clinical Instructor, Associate Professor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli Miraj Road, Sangli 416414, Maharashtra State India, <https://orcid.org/0009-0001-0614-8378>

²Clinical Instructor, Associate Professor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli Miraj Road, Sangli 416414, Maharashtra State India, ²<https://orcid.org/0009-0005-9704-4636>

³Assistant Professor, Associate Professor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli Miraj Road, Sangli 416414, Maharashtra State India, <https://orcid.org/0000-0003-2508-6368>

⁴Associate Professor, Associate Professor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli Miraj Road, Sangli 416414, Maharashtra State India, <https://orcid.org/0000-0002-2282-5818>

⁵S.PBBS.c Nursing Students, Associate Professor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli Miraj Road, Sangli 416414, Maharashtra State India

⁶S.PBBS.c Nursing Students, Associate Professor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli Miraj Road, Sangli 416414, Maharashtra State India

⁷S.PBBS.c Nursing Students, Associate Professor, Department of Psychiatric Nursing, Bharati Vidyapeeth (Deemed to be University) College of Nursing Sangli Miraj Road, Sangli 416414, Maharashtra State India

*Corresponding author: Dr Bahubali Jinnappa Geddugol,

ABSTRACT

Background and objective: Cognitive mental status examination is an important component of psychiatric nursing assessment. Nursing students require both theoretical knowledge and practical skills to perform the assessment systematically. This study evaluated the effectiveness of a structured skill station program on nursing students' knowledge and practice regarding cognitive mental status examination.

Materials and methods: A quantitative evaluative approach with a quasi-experimental one-group pre-test and post-test design was used. The study included 100 third-year B.Sc. Nursing students from selected nursing colleges in the Sangli-Miraj-Kupwad Corporation area. Participants were selected using non-probability convenience sampling. Baseline knowledge was assessed using a structured questionnaire and practice using an observational assessment checklist. A 45-minute structured skill station session was provided, followed by post-test assessment. Descriptive statistics and a paired t-test were used for analysis.

Results: In the pre-test, 46% of students had average knowledge and 38% had poor knowledge. After the intervention, 53% had good knowledge and 15% had excellent knowledge. For practice, 20% had poor and 39% had average scores before the intervention; after the intervention, 54% had good and 26% had excellent scores. Mean knowledge increased from 8.67 ± 2.50 to 12.45 ± 2.56 , with a statistically significant difference ($t = -14.4532$, $df = 99$, $p < 0.00001$). Mean practice increased from 27.94 ± 7.61 to 35.95 ± 6.72 , also showing a statistically significant difference ($t = -10.5369$, $df = 99$, $p < 0.00001$).

Conclusion: The structured skill station program was associated with significant improvement in knowledge and practice regarding cognitive mental status examination among nursing students. Skill station-based teaching may be a useful educational strategy for strengthening practical competency in psychiatric nursing.

KEYWORDS: Mental status examination; Nursing students; Skill station; Psychiatric nursing; Simulation-based education; Clinical competency

INTRODUCTION

Mental health assessment is an essential component of nursing practice, particularly in psychiatric and mental health settings. Nurses frequently participate in the assessment of patients' cognition, perception, thought processes, orientation, memory, attention, and judgment. Competence in these areas is important for identifying abnormalities, communicating findings, planning individualized care, and evaluating patient responses.

Nursing students may experience difficulty performing cognitive mental status examination because of limited clinical exposure, insufficient confidence, communication challenges, and anxiety when interacting with patients with mental illness. Conventional classroom teaching can provide theoretical information but may offer fewer opportunities for repeated, supervised practice. Educational approaches that connect theory with hands-on learning are therefore relevant to psychiatric nursing education.

Skill station teaching provides a structured environment in which students can observe a demonstration, perform a skill, repeat the procedure, and receive immediate feedback. Simulation-based and experiential approaches have been reported to improve psychiatric assessment, communication, clinical reasoning, confidence, and preparedness among nursing students. Previous literature cited in the source thesis includes studies of

standardized-patient simulation, mental status examination simulation, psychiatric OSCEs, high-fidelity simulation, and systematic reviews of mental health simulation.

The present study was undertaken to assess whether a structured skill station program could improve nursing students' knowledge and practice regarding cognitive mental status examination. The study focused on students from selected nursing colleges in the Sangli-Miraj-Kupwad Corporation area.

MATERIALS AND METHODS

Study design and setting. A quantitative evaluative approach was used with a quasi-experimental one-group pre-test and post-test design ($O_1 \rightarrow X \rightarrow O_2$), where O_1 represented the pre-test, X represented the skill station training, and O_2 represented the post-test. The study was conducted in selected nursing colleges in the Sangli-Miraj-Kupwad Corporation area.

Participants and sampling. The study included 100 third-year B.Sc. Nursing students. A non-probability convenience sampling technique was used. Inclusion criteria included enrollment in the B.Sc. Nursing program, third-year status, availability throughout data collection and intervention, willingness to provide informed written consent, and ability to participate in practical skill training. Students with previous formal training or workshops on mental status examination or cognitive assessment, current psychiatric/mental health nursing clinical postings, unwillingness or absence during any assessment/intervention, or conditions reported in the thesis as potentially affecting learning or practice were excluded.

Study instruments. The data collection tools comprised a structured questionnaire for knowledge and an observational checklist/skill assessment for practice. The thesis states that the tools were reviewed by subject experts for content validity. Five experts were involved in tool validation. Reliability was assessed using Karl Pearson's correlation coefficient, reported in the thesis as $r = 0.84$. A pilot study involving 10% of the sample was conducted to assess feasibility; the thesis reports that no significant modifications were required.

Intervention and procedure. On Day 1, participants underwent a pre-test to assess baseline knowledge and practice regarding cognitive mental status examination. Immediately after the pre-test, a 45-minute structured skill station session was provided. The thesis contains inconsistent statements regarding the interval to the post-test (one section states the eighth day and another states the fourth day). The exact interval should therefore be verified against the original study records before journal submission. The post-test was used to assess changes in knowledge and practice after the intervention.

Ethical considerations. The thesis states that formal Institutional Ethics Committee approval, administrative permission, informed written consent, expert validation, reliability assessment, and a pilot study were part of the planned study procedure. However, an Institutional Ethics Committee name and approval number are not provided in the supplied thesis text. These details must be inserted and verified before submission to Cureus. Cureus requires appropriate ethics approval for human-subject research and the relevant approval information in the submission.

Statistical analysis. Frequencies and percentages were used for demographic and categorical variables. Mean and standard deviation were used for knowledge and practice scores. A paired t-test was used to compare pre-test and post-test scores. Statistical significance was assessed at the 0.05 level. Ethics approval: The supplied thesis states that formal Institutional Ethics Committee approval was part of the study procedure.

Informed consent: The thesis describes informed written consent as part of the study procedure. The final manuscript should confirm the consent process as actually completed.

RESULTS

Table 1. Age distribution of participants.

Age (years)	n	%
21	70	70
22	30	30
Total	100	100

A total of 100 third-year B.Sc. Nursing students were included in the analysis. The demographic distribution showed that 70% of participants were 21 years old and 30% were 22 years old. The sample included equal proportions of male and female students (50% each).

Table 2. Gender distribution of participants.

Gender	n	%
Male	50	50
Female	50	50
Total	100	100

Presents the gender distribution of the participants. Out of the total 100 nursing students included in the study, **50 (50%) were male and 50 (50%) were female**. Thus, the study sample consisted of an equal proportion of male and female participants. This indicates that both male and female nursing students were equally represented in the study sample.

Table 3. Knowledge categories before and after the skill station.

Knowledge level	Pre-test n (%)	Post-test n (%)
Excellent (16–20)	0 (0)	15 (15)
Good (12–15)	16 (16)	53 (53)
Average (8–11)	46 (46)	31 (31)
Poor (4–7)	38 (38)	1 (1)
Very poor (<4)	0 (0)	0 (0)

Knowledge outcomes. Before the skill station, 46% of students had average knowledge, 38% had poor knowledge, 16% had good knowledge, and none had excellent or very poor knowledge. Following the intervention, 53% had good knowledge, 15% had excellent knowledge, 31% had average knowledge, and 1% had poor knowledge.

Table 4. Practice categories before and after the skill station.

Practice level	Pre-test n (%)	Post-test n (%)
Excellent (41–50)	2 (2)	26 (26)
Good (31–40)	39 (39)	54 (54)
Average (21–30)	39 (39)	19 (19)
Poor (≤ 20)	20 (20)	1 (1)

Practice outcomes. Before the intervention, 39% of students had good practice scores, 39% had average scores, 20% had poor scores, and 2% had excellent scores. Following the intervention, 54% had good practice scores, 26% had excellent scores, 19% had average scores, and 1% had poor scores.

Table 5. Comparison of pre-test and post-test knowledge and practice scores.

Outcome	Pre-test mean $\pm$ SD	Post-test mean $\pm$ SD	t	df	p-value
Knowledge	8.67 $\pm$ 2.50	12.45 $\pm$ 2.56	-14.4532	99	<0.00001
Practice	27.94 $\pm$ 7.61	35.95 $\pm$ 6.72	-10.5369	99	<0.00001

Paired comparisons showed statistically significant improvement in both outcomes. Presents the comparison of pre-test and post-test knowledge and practice scores among the nursing students following the skill station teaching intervention. The **mean knowledge score increased from 8.67 $\pm$ 2.50 in the pre-test to 12.45 $\pm$ 2.56 in the post-test**. The obtained *t* value was **-14.4532 with 99 degrees of freedom**, and the result was statistically significant (***p* < 0.00001**), indicating a significant improvement in students' knowledge following the intervention.

Similarly, the **mean practice score increased from 27.94 $\pm$ 7.61 in the pre-test to 35.95 $\pm$ 6.72 in the post-test**. The calculated *t* value was **-10.5369 with 99 degrees of freedom**, with a statistically significant result (***p* < 0.00001**). This indicates a significant improvement in the students' practice scores after receiving skill station teaching.

Overall, the findings demonstrate a **statistically significant improvement in both knowledge and practice scores from pre-test to post-test**, suggesting that the skill station teaching intervention was associated with improved learning outcomes among the participating nursing students.

DISCUSSION

The present study found substantial improvement in nursing students' knowledge and practice following a structured skill station program for cognitive mental status examination. The improvement was demonstrated both in the distribution of performance categories and in the statistically significant increase in mean scores.

The findings are consistent with the literature summarized in the thesis. Studies of standardized-patient simulation and mental status examination simulation have reported improvements in students' cognition, psychiatric assessment skills, confidence, communication, and satisfaction with learning. Reviews of simulation-based education have similarly reported benefits in knowledge, clinical reasoning, decision-making, and practical competency.

A likely educational explanation is that skill stations provide opportunities to observe the correct sequence of assessment, practice the skill repeatedly, receive immediate feedback, and connect theoretical concepts with clinical performance. These features may be particularly useful for psychiatric assessment, where communication and systematic observation are integral to competent practice.

The study should nevertheless be interpreted in light of its design. The one-group pre-test/post-test design does not include a concurrent control group, so improvements cannot be attributed exclusively to the intervention with the same certainty as in a randomized controlled trial. Convenience sampling and recruitment from selected nursing colleges also limit generalizability. The source thesis recommends larger studies, comparisons with conventional teaching, studies in different nursing contexts, and longer-term assessment of retention.

CONCLUSIONS

Among the 100 nursing students studied, the structured skill station program was associated with significant improvements in knowledge and practice regarding cognitive mental status examination. The findings support the use of skill station-based teaching as a practical educational strategy for strengthening students' competency in psychiatric and mental health assessment.

Future studies using larger samples, control or comparison groups, multiple educational settings, and longer follow-up periods may provide stronger evidence regarding effectiveness and retention of learning.

The present study found substantial improvement in nursing students' knowledge and practice following a structured skill station program for cognitive mental status examination. The improvement was demonstrated both in the distribution of performance categories and in the statistically significant increase in mean scores.

The findings are consistent with the literature summarized in the thesis. Studies of standardized-patient simulation and mental status examination simulation have reported improvements in students' cognition, psychiatric assessment skills, confidence, communication, and satisfaction with learning. Reviews of simulation-based education have similarly reported benefits in knowledge, clinical reasoning, decision-making, and practical competency.

Acknowledgment: the investigators remain indebted for the wholehearted participation in the study and extend the gratitude to the authorities for granting the permission to conduct the study.

Conflict of Interest: The authors declare no conflict of interest involved.

Funding: The project was entirely self-funded.

REFERENCES

1. Singano VE, Millanzi WC, Moshi F: Effect of standardized patient simulation-based pedagogics embedded with lecture in enhancing mental status evaluation cognition among nursing students in Tanzania: a longitudinal quasi-experimental study. *BMC Med Educ.* 2024, 24:577. 10.1186/s12909-024-05562-4.
2. Palanivelu P, Dioso R: Simulation of mental status examination (MSE) on skills to interpret findings, self-confidence, and satisfaction with learning among nursing students: a randomized control pilot study. *J Med Pharm Chem Res.* 2023, 5:1204-16. 10.48309/jmpr.2023.182603.
3. Olasoji M, Huynh M, Edward KL, et al.: Undergraduate student nurses' experience of mental health simulation pre-clinical placement: a pre/post-test survey. *Int J Ment Health Nurs.* 2020, 29:854-61. 10.1111/inm.12715.
4. Martínez-Riera JR, et al.: Nursing students' perceptions on the use of clinical simulation in psychiatric and mental health nursing by means of objective structured clinical examination (OSCE). *Nurse Educ Today.* 2021, 100:104866. 10.1016/j.nedt.2021.104866.
5. Ozkara San E, Dikec G, Ata EE, Sendir M: Evaluation of the use of diverse mental health simulation in nursing students' learning experience: an international multisite study. *Nurse Educ.* 2021, 46:E148-E153. 10.1097/NNE.0000000000001007.
6. Luebbert R, Perez A, Andrews A, Webster-Cooley T: Standardized patients versus mannequins in mental health simulation. *Clin Simul Nurs.* 2023, 29(4). 10.1177/10783903231183322.
7. Kameg K, Mitchell AM, Clochesy J, Howard VM, Suresky JM: Communication and human patient simulation in psychiatric nursing. *Issues Ment Health Nurs.* 2009, 30:503-8. 10.1080/01612840902935910.
8. Webster D: Using standardized patients to teach therapeutic communication in psychiatric nursing. *Clin Simul Nurs.* 2014, 10:e81-e86. 10.1016/j.ecns.2013.08.005.
9. Reangsing C, Hayes C, Maneeekunwong K, Sopajaree C, Alexander L: The effects of mental health simulations on nursing students' knowledge and performance: a systematic review and meta-analysis. *Nurse Educ Pract.* 2026, 92:104755. 10.1016/j.nepr.2026.104755.
10. Brown JF: Applications of simulation technology in psychiatric mental health nursing education. *J Psychiatr Ment Health Nurs.* 2015, 22:638-44. 10.1111/jpm.12240.
11. McNaughton N, Ravitz P, Wadell A, Hodges BD: Psychiatric education and simulation: a review of the literature. *Can J Psychiatry.* 2008, 53:85-93. 10.1177/070674370805300203.
12. Alexander L, Sheen J, Rinehart N, Hay M, Boyd L: Simulation in undergraduate mental health nursing education: a literature review. *Clin Simul Nurs.* 2015, 11:445-9. 10.1016/j.ecns.2015.08.003.
13. Goodman JH, Winter SG: Review of use of standardized patients in psychiatric nursing education. *J Am Psychiatr Nurses Assoc.* 2017, 23:412-21. 10.1177/1078390317712697.
14. Kameg K, Howard VM, Clochesy J, Mitchell AM, Suresky JM: The impact of high fidelity human simulation on self-efficacy of communication skills. *Issues Ment Health Nurs.* 2010, 31:315-23. 10.3109/01612840903420331.
15. Alharbi A, Nurfiati A, Mullen RF, McClure JD, Miller WH: The effectiveness of simulation-based learning (SBL) on students' knowledge and skills in nursing programs: a systematic review. *BMC Med Educ.* 2024, 24:1099. 10.1186/s12909-024-06080-z.
16. Görücü S, Türk G, Karaçam Z: The effect of simulation-based learning on nursing students' clinical decision-making skills: systematic review and meta-analysis. *Nurse Educ Today.* 2024, 140:106270. 10.1016/j.nedt.2024.106270.

17. Zwillling E, Harrison P, Gregory K: Perceptions of undergraduate students portraying simulated participants in mental health nursing simulations. *J Am Psychiatr Nurses Assoc.* 2026, 32:120-6. 10.1177/10783903251411899.
18. Alshehri FD, Jones S, Harrison D: The effectiveness of high-fidelity simulation on undergraduate nursing students' clinical reasoning-related skills: a systematic review. *Nurse Educ Today.* 2023, 121:105679. 10.1016/j.nedt.2022.105679.