Volume 3, Issue 4, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

EVALUATING THE EFFECTIVENESS OF STUDENT-CREATED OSCE CASES IN ENHANCING CLINICAL JUDGMENT AND DECISION-MAKING AMONG FINAL-YEAR NURSING STUDENTS

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DOI: https://doi.org/10.5281/zenodo.15681933

Keywords
Clinical judgment, decision-making, nursing education, simulation, structured intervention

Article History
Received on 08 May 2025
Accepted on 08 June 2025
Published on 17 June 2025

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Abstract

Background: *Clinical judgment and decision-making are essential competencies in nursing education, directly influencing patient safety and care quality. Traditional teaching methods often fall short in equipping students with these skills. Structured educational interventions have been increasingly used to address this gap, with promising outcomes.*

Aim: *This study aimed to evaluate the effectiveness of a structured educational intervention in improving clinical judgment and decision-making among final-year nursing students.*

Methods: *A quasi-experimental design with pre- and post-test evaluation was conducted among 60 nursing students, equally divided into intervention and control groups (n = 30 each). The intervention group received simulation-based training and guided feedback sessions, while the control group followed standard teaching methods. The Lasater Clinical Judgment Rubric (LCJR) and Clinical Decision-Making in Nursing Scale (CDMNS) were used to assess outcomes. Paired and independent t-tests were employed for statistical analysis.*

Results: *Post-test results revealed significantly higher LCJR and CDMNS scores in the intervention group compared to the control group. The intervention group's LCJR scores improved from 21.3 ± 2.7 to 28.5 ± 3.0 ($t = 7.84$, $p = 0.0001$), while CDMNS scores increased from 114.8 ± 8.9 to 134.2 ± 9.3 ($t = 8.91$, $p = 0.0000$). Between-group comparisons also showed statistically significant differences in post-test scores for both tools ($p < 0.001$).*

Conclusion: *The study confirms that structured educational interventions significantly enhance clinical judgment and decision-making among nursing students. Integrating such methods into nursing education is strongly recommended to improve student competence and readiness for clinical practice*

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INTRODUCTION

Assessing students' clinical skills in nursing is often done with the help of OSCEs, role-playing scenarios that are well-structured and practical (Chung et al., 2025). This means that learners make the clinical tasks and scenarios to use in the OSCE format. This active-learning approach is hypothesized to stimulate deeper learning (Budd, et al.,2021). When a clinician uses their judgment, they interpret details about a patient's condition and decide on how to act, but when deciding on clinical actions, they review different treatment plans and decide on one. The skills outlined above are important for protecting patients and are often emphasized more emphasized by nursing schools across the world (Ren et al., 2021).

Across the world, nursing courses rely on using traditional OSCEs in summative evaluations, showing a pattern where over 80% of nursing programs in developed countries do this. Nevertheless, very few institutions involve students in the process of designing their clinical simulations (Al-Worafi & Alsergai, 2024). Research till now mainly looks at how faculty-run OSCEs help confirm skills, while little is explored about how student-led scenarios might improve skills like judgment and clinical thinking. Since healthcare settings are getting more complicated, we require new methods of education that stimulate students to participate and think deeply (Farsi, et al., 2022).

Improving clinical judgment takes time and includes learning from books as well as from actual experiences in the field. Using simulation, peer teaching, and work on case has been proven very useful for improving student learning. Students who become part of the OSCE case-building process might gain a better grasp of medical cases, notice indicators of clinical issues, and anticipate possible problems in medical practice (Braier-Lorimer & Warren-Miell, 2022). The method is based on constructivist ideas that say students learn well by creating their own experience (Abeyaratne et al.,2024)

In addition, creating OSCEs with students may help them become more self-reliant, think critically, and work together, which are all important for promoting higher-order thinking (Chang et al., 2021). If students are in charge of creating cases, they learn about clinical pathways, pick proper ways to assess, and justify the anticipated actions, which helps them gain a deeper knowledge of nursing processes. They may boost your performance in school and also support you in becoming ready for working in clinical settings (Pierson, et al.,2023).

In spite of the strong theoretical bases, there isn't much proof to show if student-made OSCEs work well. There is a lack of understanding in nursing simulation literature about how student contribution can help students learn better, since most attention is given to instructors' roles. Also, there is not much evidence comparing different OSCE forms with using student-designed content concerning measurable abilities such as clinical judgment (García-Salido & Garcia-Gutiérrez, 2024).

Finding out if students create OSCE situations impact their clinical reasoning is necessary when updating the curriculum. Since more nursing education is now centered on students, we should carefully examine models that assess their skills and also help them grow. Adopting these strategies might also lessen tiredness from tests and increase students' enthusiasm by becoming more involved (Wang & Ji, 2021).

Hence, this study is meant to assess how using OSCE cases made by students impacts final-year nursing students' decision-making and clinical judgment skills. In this way, it intends to bridge the gap in current evidence and suggest using assessment practices that involve patients more and help their minds.

Methodology

The study used a quasi-experimental design having both a control and an intervention group to investigate the effects of developing OSCE scenarios on clinical decision-making skills. The researchers used both pre-test and post-test methods to observe the differences in the groups.

The data was collected in the different nursing colleges in the district of Swat. The clinical practicum course for final-year Bachelor of Science in Nursing (BSN) students invited participation. Out of 60 students, 30 were randomly selected and assigned to an intervention group, who created tests, while

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ISSN: (e) 3007-1607 (p) 3007-1593

the others (also 30) made up the control group, who answered faculty-developed tests.

Those in the intervention group were told to prepare OSCE scenarios reflecting scenarios they regularly encountered in medical school. Each group of students worked on scenarios created using patient background information, observations, necessary actions, and scores, together with clinical instructors. The students' cases were then utilized during the OSCE evaluation. In the control group, students experienced traditional OSCEs in which all the scenarios were set up and implemented by instructors.

Data collection Procedure

To assess clinical judgment and decision-making skills, the Lasater Clinical Judgment Rubric (LCJR) and a validated Clinical Decision-Making in Nursing Scale (CDMNS) were used. These tools were administered before and after the OSCE sessions for both groups. Additionally, a post-OSCE reflection questionnaire was used in the intervention group to gather qualitative insights about the learning experience.

Prior to the intervention, both groups completed the LCJR and CDMNS as a pre-test. After a two-week intervention and preparation period, all participants underwent the OSCE assessment. Following the OSCE, the same tools were used as a post-test. Reflection responses from the intervention group were collected through open-ended questions immediately after the post-test.

Data Analysis:

Data were analyzed using SPSS version 25. Paired t-tests were conducted to compare pre- and post-test scores within each group. Paired t-tests and independent t test were used to compare the differences between groups. A significance level of $p < 0.05$ was considered statistically significant.

Results and Analysis

Demographic Characteristics of Participants

The research involved 60 individuals, with an equal proportion in intervention and control groups. The mean age was 23.0 +/- 1.2 yrs with a range of 21-25 yrs. The vast majority of the participants were females (68.3%), and most of them had previous OSCE experience (78.3%). The total mean GPA was 3.19 30.30, and the values were similar in both groups (Table 1).

Table 1: Demographic Characteristics of Participants (n = 60)

Variable	Intervention Group (n = 30)	Control Group (n = 30)	Total (n = 60)
Age (years)			
Mean ± SD	23.1 ± 1.2	22.9 ± 1.3	23.0 ± 1.2
Range	21–25	21–25	21–25
Gender			
Male	9 (30%)	10 (33.3%)	19 (31.7%)
Female	21 (70%)	20 (66.7%)	41 (68.3%)
Previous OSCE Experience			
Yes	24 (80%)	23 (76.7%)	47 (78.3%)
No	6 (20%)	7 (23.3%)	13 (21.7%)
Cumulative GPA			
Mean ± SD	3.21 ± 0.31	3.18 ± 0.29	3.19 ± 0.30

Pre and Post-Test Scores

LCJR scores had significantly improved in the intervention group (Mean difference = +7.2, $t = 7.84$, $p = 0.0001$) compared with the control group (+2.5, $t = 3.12$, $p = 0.004$). Likewise, the improvement on CDMNS scores was significantly better in the intervention group (+19.4, $t = 8.91$, $p = 0.0000$) compared to the control group (+6.3, $t = 2.78$, $p = 0.008$). These findings show that the intervention influenced both clinical judgment and decision-making more positively (Table 2).

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ISSN: (e) 3007-1607 (p) 3007-1593

Table 2: Pre- and Post-Test Scores for LCJR and CDMNS within Groups (Paired t-test)

Group	Tool	Mean Pre-test (SD)	Mean Post-test (SD)	Mean Difference	t-value	p-value
Intervention	LCJR	21.3 (±2.7)	28.5 (±3.0)	+7.2	7.84	0.0001
Control	LCJR	21.6 (±2.9)	24.1 (±3.1)	+2.5	3.12	0.004
Intervention	CDMNS	114.8 (±8.9)	134.2 (±9.3)	+19.4	8.91	0.0000
Control	CDMNS	116.2 (±9.6)	122.5 (±9.1)	+6.3	2.78	0.008

Post-Test Score Comparison

The intervention group showed significantly higher post-test scores than the control group in both LCJR (28.5 ± 3.0 vs. 24.1 ± 3.1, $t = 5.82$, $p = 0.001$) and CDMNS (134.2 ± 9.3 vs. 122.5 ± 9.1, $t = 5.26$, $p = 0.001$). These results indicate a statistically significant improvement in clinical judgment and decision-making. The intervention proved to be more effective than standard instruction (Table 3).

Table 3: Post-Test Score Comparison Between Groups (Independent t-test)

Tool	Intervention Group Mean (SD)	Control Group Mean (SD)	*t*-value	*p*-value
LCJR	28.5 (±3.0)	24.1 (±3.1)	5.82	0.001
CDMNS	134.2 (±9.3)	122.5 (±9.1)	5.26	0.001

Discussion

The results of this research showed a remarkable change in clinical judgment and decision-making in favor of the intervention group compared to the control one. Meaningful differences in favor of the intervention group were found in post-test LCJR scores, which implied the improved ability to engage in critical thinking and clinical reasoning. Likewise, the CDMNS scores indicated a huge improvement as well in favor of the beneficial impact of the educational intervention. These findings support the potential of planned educational interventions in enhancing clinical skills in nursing students.

The findings of this paper are also concurrent with other findings made by Ha & Lim, (2023), who indicated that well-organized learning experiences were essential in developing confidence and judgment among students when on clinical placements. Similar to their conclusions, our results allow considering that such targeted training or simulation-based interventions have a tremendous positive effect on the readiness of students to encounter the clinical situation in real life. Moreover, the idea that psychological stressors in the clinical environment can be reduced with the help of scheduled educational strategy, which was also supported by Smith et al (2022), was reflected in the increase of confidence and performance rates observed in our intervention group.

Comparing these results, Portela Dos Santos et al (2022), found that, despite favorable conditions of learning, psychological distress and academic pressures may decline performance and raise the intention to leave among the students. Such discrepancy might be explainable by the differences in the intensity or nature of educational intervention or the systems of support during the implementation process. Although we have included the highly-structured approach in our research, with consistent feedback, the lack of these elements in other settings could be viewed as the cause of the inconsistent results.

The overall effect of decision-making improvement observed in this study in line with Kim et al., 2022), who stated that nursing education based on ethical frameworks and critical analysis has a significant positive impact on decision-making skills development. Likewise, Deng et al. (2022) identified the professional responsibility and ethical reasoning as the characteristics of advanced nursing practice, which are developed in the process of guided clinical learning the component that lies at the center of our intervention design. Those similarities support the notion that judgment and ethical decision-making can be improved with the help of focused clinical teaching methodologies.

Halliburton et al (2021), noted, though, that the proportion of ethical dilemmas still existed despite

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ISSN: (e) 3007-1607 (p) 3007-1593

enhanced educational methods, and thus it could be stated that interventions could bring the skill level up but the real-life issues still pushed the boundaries of academic training. Our study failed to quantify the sustainability of the enhanced judgment and decision-making in the long-term; hence, prospective studies would have the advantage of longitudinal designs to determine how these skills are retained over time and across different clinical environments (Lee, 2024).

Interestingly, there was also a certain improvement in the control group but the gains were comparatively much lower than the intervention group. This can be attributed to passive learning styles or a lack of experiential learning in conventional learning environments. One of the challenges, according to Combrinck (2023), is unpaid placements and intense schedules in conventional environments that do not support the development of the skills. These issues underline the necessity to introduce new learning strategies that would allow students to become better prepared to the intricacies of contemporary healthcare setting (Yan et al., 2024).

Conclusively, the study contributes to the ever-increasing body of knowledge in the need to employ structured and interactive educational interventions in nursing education. The mean difference of -10.25 in the improvement of clinical judgment and decision-making in favor of the intervention group demonstrates the usefulness of simulation, feedback, and guided learning. These results support the ideas of curriculum enrichment with experiential learning instruments, especially at resource-constrained environments where the ordinary teaching process might be insufficient to adjust students to the clinical conditions.

Conclusion and Recommendations

Overall, the results of this research prove that well-planned educational programs can substantially improve the abilities of nursing students in relation to clinical judgment and decision-making. The applied teaching strategy was effective as the participants of the intervention group demonstrated significant changes in both LCJR and CDMNS scores in comparison with the control group. These findings highlight the fundamental importance of interactive and evidence-based pedagogical approaches in equipping nursing students with the challenging clinical setting. The systematic review is in favor of the incorporation of such interventions in nursing curricula to promote critical thinking, confidence, and clinical competence.

According to the findings, it is suggested that nursing teachers should implement systematic methods of learning, including simulation-based education and supervised clinical reasoning, to strengthen the clinical skills of the students. In nursing curricula, frequent evaluation with the help of validated assessment scales such as LCJR and CDMNS should become a routine to track the progress and tailor teaching methods to the needs of the students. Further studies ought to examine the effects of such interventions in the long term and conduct a replication of the study in more institutions to enhance generalizability. Also, it might be suggested that the practice of reflection and mentorship throughout clinical placements can also enhance the formation of clinical judgment and decision-making in nursing students.

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