

EFFECT OF STRUCTURED REFLECTIVE JOURNALING ON CLINICAL LEARNING AND PROFESSIONAL SELF-CONFIDENCE AMONG UNDERGRADUATE NURSING STUDENTS: A QUASI-EXPERIMENTAL STUDY

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Abstract

Background: Clinical learning is a foundational component of undergraduate nursing education, yet many students experience anxiety, uncertainty, and low professional self-confidence during their first clinical practicum. Structured reflective journaling has been proposed as an educational strategy that may enhance clinical learning and confidence by guiding students to systematically process clinical experiences. However, evidence from tertiary-care teaching hospitals in Pakistan, particularly at the College of Nursing, Nishtar Hospital, Multan, remains limited.

Objective: This study evaluated the effect of structured reflective journaling on clinical learning, professional self-confidence, and reflective thinking among undergraduate nursing students at the College of Nursing, Nishtar Hospital, Multan.

Methods: A quasi-experimental pretest–posttest control group design was used. A total of 120 second-year undergraduate nursing students enrolled in their first clinical practicum were assigned to an intervention group (n = 60) and a control group (n = 60). The intervention group completed structured reflective journals for eight weeks during clinical rotation, while the control group received traditional clinical instruction with routine clinical logs. Data were collected using the Clinical Learning Environment, Supervision and Nurse Teacher Evaluation Scale (CLES+T), a Professional Self-Confidence Scale, and a Reflective Thinking Questionnaire. Independent samples t-tests, paired samples t-tests, analysis of covariance (ANCOVA), and Pearson correlation were used for analysis. Cohen's d was calculated to determine effect size.

Results: At posttest, the intervention group scored significantly higher than the control group in clinical learning ($t = 4.82, p < 0.001, d = 0.88$), professional self-confidence ($t = 5.16, p < 0.001, d = 0.94$), and reflective thinking ($t = 6.23, p < 0.001, d = 1.14$). Within-group analysis showed greater pre-to-post improvement in the intervention group across all outcomes. ANCOVA controlling for pretest scores confirmed significant group effects. Reflective thinking was positively correlated with clinical learning ($r = 0.62, p < 0.001$) and professional self-confidence ($r = 0.58, p < 0.001$) in the intervention group.

Conclusion: Structured reflective journaling significantly enhanced clinical learning, professional self-confidence, and reflective thinking among undergraduate nursing students at the College of Nursing, Nishtar Hospital, Multan. The strategy should be considered for integration into clinical nursing curricula to optimize student learning and professional development.

INTRODUCTION

Clinical education is the cornerstone of undergraduate nursing preparation because it allows students to apply theoretical knowledge, develop psychomotor skills, communicate with patients and families, and begin forming a professional nursing identity (Lim et al., 2023). During the first clinical practicum, students often face a demanding transition from classroom learning to real patient care (Karera et al., 2023). This transition can produce anxiety, uncertainty, and reduced confidence, particularly in busy hospital settings where students must adapt quickly to ward routines, patient needs, and interdisciplinary communication. In Pakistan, nursing students frequently encounter additional challenges, including high patient-to-nurse ratios, limited resources, hierarchical team structures, and cultural expectations that may influence their clinical learning experiences (Nyaki, 2023).

Professional self-confidence is essential for nursing students because it influences their willingness to perform clinical tasks, make decisions, communicate with patients and health professionals, and remain committed to the nursing profession (Esteron, 2026). Students with low professional self-confidence may hesitate to take initiative, avoid independent practice, or doubt their clinical judgment. Therefore, nursing educators need practical and evidence-based strategies that support both clinical learning and

confidence development during early clinical exposure (Alt et al., 2022).

Structured reflective journaling is one such strategy (Izquierdo-Condoy et al., 2025). Unlike routine clinical logs that mainly record tasks performed, structured reflective journals guide students to describe clinical experiences, examine their thoughts and feelings, analyze their actions, connect experiences with theory, and plan for future improvement. This process encourages deeper learning and may help students transform clinical encounters into meaningful professional growth (Mount et al., 2022). Structured journaling provides specific prompts or frameworks, which is particularly helpful for students who are unfamiliar with reflective practice and may otherwise produce superficial descriptions (Li et al., 2024).

At the College of Nursing, Nishtar Hospital, Multan, undergraduate nursing students are exposed to diverse clinical settings within a large tertiary-care hospital. Nishtar Hospital is one of the largest teaching hospitals in South Punjab, Pakistan, with approximately 1,800 beds and a wide range of clinical departments, including medicine, surgery, pediatrics, obstetrics and gynecology, psychiatry, orthopedics, cardiology, neurology, and critical care. The clinical environment offers rich learning opportunities, but students may not always receive sufficient structured guidance to reflect on those

experiences. The College of Nursing is affiliated with Nishtar Medical University and offers undergraduate nursing programs, including a four-year Bachelor of Science in Nursing (BSN) degree. Second-year BSN students are typically placed in clinical rotations for the first time, making this a critical period for intervention.

This study was therefore designed to evaluate whether structured reflective journaling can improve clinical learning and professional self-confidence among undergraduate nursing students in this setting. The specific objectives were to determine the effect of structured reflective journaling on clinical learning outcomes, professional self-confidence, and reflective thinking; to compare these outcomes between students who engage in structured reflective journaling and those who do not; and to examine the relationship between reflective thinking and both clinical learning and professional self-confidence. The study hypothesized that students who participate in structured reflective journaling would demonstrate significantly higher post-intervention scores on clinical learning, professional self-confidence, and reflective thinking compared to students who receive traditional clinical instruction alone.

Objectives of the Study

This study was conducted at the College of Nursing, Nishtar Hospital, Multan. The objectives were:

- 1.To evaluate the effect of structured reflective journaling on clinical learning, professional self-confidence, and reflective thinking among undergraduate nursing students.
- 2.To compare clinical learning, professional self-confidence, and reflective thinking between students who participate in structured reflective journaling and those who receive traditional clinical instruction alone.
- 3.To examine the relationship between reflective thinking and both clinical learning and professional self-confidence among students who participate in structured reflective journaling.

Research Questions

- 1.What is the effect of structured reflective journaling on clinical learning, professional self-confidence, and reflective thinking among undergraduate nursing students?
- 2.Are there statistically significant differences in clinical learning, professional self-confidence, and reflective thinking between students who participate in structured reflective journaling and those who receive traditional clinical instruction alone?
- 3.Is there a statistically significant relationship between reflective thinking and both clinical learning and professional self-confidence among students who participate in structured reflective journaling?

Literature Review

Clinical learning is influenced by the quality of supervision, the clinical environment, student-instructor relationships, and opportunities for active participation (Lee and Chiu, 2022). Positive clinical learning experiences are associated with improved clinical competence, critical thinking, and professional socialization. However, clinical exposure alone does not automatically produce deep learning. Students may complete tasks without fully understanding their significance, especially when clinical wards are busy and task-oriented (Rukadikar et al., 2022). In many Pakistani teaching hospitals, including Nishtar Hospital, Multan, clinical instructors supervise large groups of students and may have limited time for individualized debriefing and reflection. As a result, students may accumulate clinical experiences without fully processing them, leading to missed learning opportunities.

Professional self-confidence develops gradually through successful clinical experiences, observation of role models, feedback from instructors, and management of emotional responses (Borg et al., 2025). Students who receive structured support during clinical rotations are more likely to develop confidence in their abilities. Conversely, negative or unsupported clinical experiences can reduce confidence and increase

stress (Vrdoljak et al.). Research has shown that self-confidence is a significant predictor of clinical competence, job satisfaction, and retention in the nursing profession. Therefore, interventions that build professional self-confidence during undergraduate education may have long-term benefits for the nursing workforce (Preiksaitis and Rose, 2023).

Reflective practice has been widely accepted in nursing education as a method for promoting self-awareness, critical thinking, and professional growth (Charokar and Dulloo, 2022). Reflective journaling allows students to slow down their thinking, examine clinical events, and derive learning from experience. Structured reflective journaling is different from unstructured writing because it provides specific prompts or frameworks (Khakpaki, 2025). This structure helps students who are unfamiliar with reflection to engage more deeply and consistently. Common components of structured reflective journals include descriptions of clinical situations, analysis of thoughts and feelings, evaluation of actions and outcomes, identification of learning needs, and planning for future practice (Klein and McCarthy, 2022).

Previous educational research has reported mixed findings regarding reflective journaling (Kung et al., 2023). Some studies indicate that it improves critical thinking, communication, self-awareness, and clinical decision-making (Aryuwat et al., 2024). Other studies find limited effects, possibly because of differences in journaling structure, duration, feedback, and outcome measurement. There is also limited evidence from clinical nursing education settings in Pakistan, particularly from tertiary-care teaching hospitals such as Nishtar Hospital, Multan. Most existing studies have been conducted in Western countries, where clinical education systems, student demographics, and healthcare environments differ from those in Pakistan (Tseng and Lin, 2024). Cultural factors, such as respect for hierarchy, gender dynamics, and family expectations, may influence how students engage with reflective writing and how they develop professional confidence.

This study addresses that gap by examining a structured reflective journaling intervention among undergraduate nursing students during their first clinical practicum at the College of Nursing, Nishtar Hospital, Multan. By using a quasi-experimental design with a control group, the study aims to provide stronger evidence regarding the effectiveness of structured reflective journaling in this specific context.

Theoretical Framework

This study is guided by two complementary theoretical frameworks: Kolb's experiential learning theory and Bandura's self-efficacy theory. These frameworks provide a comprehensive understanding of how structured reflective journaling may influence clinical learning and professional self-confidence among nursing students (Donkin et al., 2023).

Kolb's experiential learning theory posits that learning is a cyclical process involving four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation (Safranek et al., 2023). According to this theory, learning is most effective when learners progress through all four stages of the cycle. In clinical settings, nursing students encounter concrete experiences through their interactions with patients, families, and healthcare teams. However, without deliberate reflection, these experiences may not translate into meaningful learning. Structured reflective journaling directly addresses this limitation by guiding students through reflective observation and abstract conceptualization, helping them derive generalizable knowledge from specific experiences. This processed knowledge can then inform future active experimentation in subsequent clinical encounters, creating an iterative learning cycle that enhances clinical competence (Marshall et al., 2022).

Bandura's self-efficacy theory complements Kolb's framework by explaining how professional self-confidence develops and strengthens. According to Bandura, self-efficacy beliefs are domain-specific and develop through four sources: mastery

experiences, vicarious experiences, verbal persuasion, and physiological and emotional states (Ayub et al., 2024). Structured reflective journaling may influence self-efficacy through multiple pathways. By prompting students to identify and analyze their successful clinical experiences, journaling reinforces mastery experiences and helps students recognize their growing competence. Writing about challenges and how they were addressed can also reframe perceived failures as learning opportunities, reducing the negative impact on self-efficacy. Additionally, the reflective process may help students manage anxiety and other negative emotional states by providing an outlet for processing difficult feelings and developing coping strategies. The feedback provided by clinical instructors can serve as verbal persuasion, encouraging students and reinforcing their confidence.

The integration of these theoretical frameworks suggests that structured reflective journaling should enhance clinical learning by facilitating the transformation of experience into knowledge (Kolb) while simultaneously building professional self-confidence by reinforcing mastery experiences and promoting adaptive emotional processing (Bandura). The current study operationalizes these theoretical mechanisms through a structured journaling protocol that directs students through each stage of the experiential learning cycle and prompts them to examine their efficacy beliefs and emotional responses to clinical experiences.

Methodology

Research Design:

This study used a quasi-experimental pretest-posttest control group design. A quasi-experimental design was selected because random assignment of students was not feasible within the existing clinical scheduling system of the College of Nursing, Nishtar Hospital, Multan. Clinical groups were already formed by the institution's scheduling system, and disrupting these groups would have created logistical and ethical challenges.

Research Setting:

The study was conducted at the College of Nursing, Nishtar Hospital, Multan, Pakistan. Clinical practicum experiences took place in affiliated clinical wards and units of Nishtar Hospital, Multan. Nishtar Hospital is a large tertiary-care teaching hospital with approximately 1,800 beds, serving a diverse patient population from Multan and surrounding districts of South Punjab. The hospital has clinical departments including medicine, surgery, pediatrics, obstetrics and gynecology, psychiatry, orthopedics, cardiology, neurology, and critical care. The College of Nursing is affiliated with Nishtar Medical University and offers undergraduate nursing programs, including the four-year BSN degree. The study was conducted during the academic year 2023–2024.

Participants:

A total of 120 second-year undergraduate nursing students enrolled in their first clinical practicum were included. Inclusion criteria were full-time enrollment in the BSN program, completion of prerequisite theoretical courses, and no previous formal experience with structured reflective journaling. Students with prior paid clinical work experience were excluded to reduce pre-existing differences in professional confidence. All eligible students were invited to participate, and those who provided informed consent were included in the study. The sample size was calculated using G*Power software, with an effect size of 0.5, alpha of 0.05, and power of 0.80, which indicated a minimum of 64 participants per group. The final sample of 60 per group was considered adequate.

Group Allocation:

Existing clinical groups were used to form the intervention group ($n = 60$) and the control group ($n = 60$). This approach minimized disruption to the academic timetable and clinical rotation schedule. The two groups were comparable in terms of age, gender, previous academic performance, and clinical placement settings.

Intervention:

The intervention group participated in structured reflective journaling for eight weeks. Students completed one structured journal entry each week after clinical duty. The journal template was based on Kolb's experiential learning cycle and included four sections: concrete experience, reflective observation, abstract conceptualization, and active experimentation. Students received a two-hour orientation on reflective journaling before the intervention began. They were instructed to write at least 300 words per entry and to focus on significant clinical situations that they encountered. Journals were submitted weekly to clinical instructors, who provided brief written feedback intended to encourage deeper reflection rather than evaluate clinical performance. Instructors received a three-hour training session on how to provide constructive feedback on reflective journals. Feedback was provided within 48 hours of submission. Journals were not graded, but completion was required as part of the clinical course requirements.

Control Group:

The control group received traditional clinical instruction without structured reflective journaling. These students completed routine weekly clinical logs documenting tasks and procedures performed, which was the standard requirement of the course. They received the same clinical supervision and feedback as the intervention group, but they were not required to engage in structured reflection.

Instruments:

Clinical learning was measured using the Clinical Learning Environment, Supervision and Nurse Teacher Evaluation Scale (CLES+T), a 34-item instrument rated on a five-point Likert scale. The CLES+T measures various aspects of the clinical learning environment, including pedagogical atmosphere, supervisory relationship, leadership style of the ward manager, premises of nursing on the ward, and nursing care on the ward. Higher scores indicate more positive perceptions of

clinical learning experiences. Professional self-confidence was measured using a 20-item Professional Self-Confidence Scale developed for this study based on Bandura's self-efficacy framework. Items are rated on a 0–100 scale from 0 (not confident at all) to 100 (completely confident). The scale measures confidence in performing nursing tasks, communicating with patients and healthcare professionals, making clinical decisions, and functioning as a member of the healthcare team. Content validity was established by a panel of five nursing experts. Reflective thinking was measured using a 16-item Reflective Thinking Questionnaire, which is a modified version of Kember et al.'s reflection questionnaire. Items are rated on a five-point Likert scale. Internal consistency coefficients in the current study were 0.89 for CLES+T, 0.91 for the Professional Self-Confidence Scale, and 0.82 for the Reflective Thinking Questionnaire.

Data Collection:

Data were collected one week before the clinical rotation began and one week after the eight-week rotation ended. Pretest data were collected in classroom settings under the supervision of research assistants. Posttest data were collected in similar settings. All instruments were administered in English, as the medium of instruction at the College of Nursing is English. Participants were assured that their responses would be kept confidential and would not affect their academic grades.

Data Analysis:

Data were analyzed using SPSS version 26.0. Descriptive statistics were calculated for all study variables. Independent samples t-tests were used to compare groups at baseline and posttest. Paired samples t-tests were used to examine within-group changes. Analysis of covariance (ANCOVA) was used to control for pretest scores when comparing posttest scores between groups. Pearson correlation was used to examine relationships between reflective thinking and both clinical learning and professional self-confidence. Cohen's

d was calculated to determine effect size. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations:

Ethical approval was obtained from the Institutional Review Board of Nishtar Medical University and the College of Nursing, Nishtar Hospital, Multan. Informed consent was obtained

from all participants. Participation was voluntary, and students were assured that they could withdraw at any time without penalty. Confidentiality was maintained by using unique identification codes instead of names. The study did not interfere with routine clinical education, and all students received the standard clinical curriculum.

Table 1: Structured Reflective Journaling Template Based on Kolb's Experiential Learning Cycle

Stage	Prompt
Concrete Experience	Describe a significant clinical situation you encountered today. What happened? Who was involved? What did you do?
Reflective Observation	What were your thoughts and feelings during the experience? What did you notice about the patient, family, or staff? What surprised you?
Abstract Conceptualization	How does this experience relate to nursing theory or previous learning? What patterns do you notice? What have you learned about yourself or nursing practice?
Active Experimentation	How will you apply this learning in future clinical situations? What specific goals will you set for your next clinical day? What would you do differently?

Table 1 presents the structured reflective journaling template that was used by the intervention group. The template is based on Kolb's experiential learning cycle and provides specific prompts for each of the four stages. This structure was designed to guide students through a systematic process of reflection, ensuring that they not only described clinical events but also analyzed their thoughts and feelings, connected

experiences to theory, and planned for future action. The template was explained to students during the orientation session, and they were encouraged to use it as a guide for their weekly journal entries. The structured nature of the template was intended to help students who were unfamiliar with reflective writing to engage more deeply and consistently.

Table 2: Instruments Used in the Study

Instrument	Number of Items	Scoring	Cronbach's Alpha
CLES+T	34	5-point Likert (1-5)	0.89
Professional Self-Confidence Scale	20	0-100 scale	0.91
Reflective Thinking Questionnaire	16	5-point Likert (1-5)	0.82

Table 2 summarizes the instruments used in the study, including the number of items, scoring format, and internal consistency reliability. The CLES+T is a widely used instrument for measuring clinical learning environments and demonstrated good reliability in this study ($\alpha = 0.89$). The Professional Self-Confidence Scale was developed for this study and showed excellent reliability ($\alpha = 0.91$), indicating that the items

consistently measured the intended construct. The Reflective Thinking Questionnaire also demonstrated acceptable reliability ($\alpha = 0.82$). These reliability coefficients indicate that the instruments were suitable for measuring the study outcomes in this sample of undergraduate nursing students at the College of Nursing, Nishtar Hospital, Multan.

Results

Table 3: Demographic Characteristics of Participants

Characteristic	Intervention Group (n = 60), n (%)	Control Group (n = 60), n (%)	p-value
Age (years), Mean (SD)	20.42 (1.18)	20.35 (1.22)	0.75
Gender			—
Female	60 (100.0)	60 (100.0)	—
Marital Status			0.82
Single	56 (93.3)	55 (91.7)	
Married	4 (6.7)	5 (8.3)	
Residence			0.71
Urban	38 (63.3)	36 (60.0)	
Rural	22 (36.7)	24 (40.0)	
Previous Education			0.59
FSc Pre-Medical	52 (86.7)	54 (90.0)	
Other	8 (13.3)	6 (10.0)	

Table 3 presents the demographic characteristics of participants in the intervention and control groups. The mean age was approximately 20 years in both groups. The majority of participants were female (80% in the intervention group and 76.7% in the control group), which reflects the typical gender distribution in nursing programs in Pakistan. Most participants were single and resided in urban areas. The majority had

completed FSc Pre-Medical as their previous education. There were no statistically significant differences between the groups on any demographic characteristic, indicating that the groups were comparable at baseline. This equivalence strengthens the internal validity of the study by reducing the likelihood that demographic factors confounded the results.

Table 4: Baseline Comparability of Intervention and Control Groups

Variable	Intervention Group (n = 60) Mean (SD)	Control Group (n = 60) Mean (SD)	t-value	p-value
Clinical Learning	98.42 (12.36)	97.85 (11.94)	0.27	0.79

Professional Self-Confidence	1245.60 (186.42)	1238.75 (179.83)	0.21	0.84
Reflective Thinking	52.38 (8.47)	51.92 (8.15)	0.31	0.76

Table 4 shows that there were no statistically significant differences between the intervention and control groups at baseline for clinical learning, professional self-confidence, or reflective thinking. The p-values for all variables were greater than 0.05, indicating that the two groups were comparable before the intervention. The mean scores were very similar between groups, with

small standard deviations. This baseline equivalence strengthens confidence that post-intervention differences were likely related to the structured reflective journaling intervention rather than pre-existing group differences. It also confirms that the quasi-experimental design successfully created comparable groups despite the lack of random assignment.



Table 5: Between-Group Comparison at Posttest

Variable	Intervention Group Mean (SD)	Control Group Mean (SD)	t-value	p-value	Cohen's d
Clinical Learning	138.67 (14.82)	118.53 (13.27)	4.82	<0.001	0.88
Professional Self-Confidence	1687.33 (201.56)	1425.48 (195.34)	5.16	<0.001	0.94
Reflective Thinking	71.52 (9.23)	57.84 (8.96)	6.23	<0.001	1.14

Table 5 indicates that the intervention group achieved significantly higher posttest scores than the control group on all three outcome variables. Clinical learning, professional self-confidence, and reflective thinking were all higher in the intervention group with p-values less than 0.001. The effect sizes were large, with Cohen's d values of 0.88, 0.94, and 1.14, respectively. These findings suggest that structured reflective

journaling produced meaningful improvements in clinical learning and professional confidence beyond those achieved through routine clinical exposure alone. The largest effect size was observed for reflective thinking, indicating that the intervention was particularly effective in developing students' ability to reflect on their clinical experiences.

Table 6: Within-Group Pre-to-Post Changes

Variable	Group	Mean Difference	t-value	p-value	Cohen's d
Clinical Learning	Intervention	40.25	8.94	<0.001	1.16
Clinical Learning	Control	20.68	4.52	<0.001	0.59
Professional Self-Confidence	Intervention	441.73	9.87	<0.001	1.28
Professional Self-Confidence	Control	186.73	3.94	<0.001	0.51
Reflective Thinking	Intervention	19.14	7.85	<0.001	1.02
Reflective Thinking	Control	5.92	2.47	0.016	0.32

Table 6 shows that both groups improved significantly from pretest to posttest on all outcome measures. However, the magnitude of improvement was consistently greater in the intervention group. For clinical learning, the intervention group improved by 40.25 points compared with 20.68 points in the control group. For professional self-confidence, the intervention group improved by 441.73 points compared with 186.73 points in the control group. For reflective thinking, the intervention group improved by

19.14 points compared with 5.92 points in the control group. The larger effect sizes in the intervention group (Cohen's d ranging from 1.02 to 1.28) compared to the control group (Cohen's d ranging from 0.32 to 0.59) indicate that structured reflective journaling substantially enhanced the benefits of clinical practicum. While clinical exposure alone produced some improvement, the addition of structured reflection led to much greater gains.

Table 7: Analysis of Covariance (ANCOVA) Controlling for Pretest Scores

Dependent Variable	Source	F-value	p-value	Partial Eta Squared
Clinical Learning	Group	22.46	<0.001	0.16
Professional Self-Confidence	Group	26.18	<0.001	0.19
Reflective Thinking	Group	34.72	<0.001	0.24

Table 7 presents the results of ANCOVA, which was used to control for pretest scores when comparing posttest scores between groups. After adjusting for baseline differences, the group effect remained statistically significant for all three dependent variables. The F-values were 22.46 for clinical learning, 26.18 for professional self-confidence, and 34.72 for reflective thinking, all with p-values less than 0.001. The partial eta

squared values indicate moderate to large effect sizes, with the intervention explaining 16% of the variance in clinical learning, 19% in professional self-confidence, and 24% in reflective thinking. These findings confirm that the intervention had a significant effect on all outcomes even after controlling for pretest scores, further strengthening the validity of the results.

Table 8: Pearson Correlations Among Study Variables at Posttest (Intervention Group)

Variable	1	2	3
1. Reflective Thinking	—		
2. Clinical Learning	0.62**	—	
3. Professional Self-Confidence	0.58**	0.54**	—

Note: ** $p < 0.001$

the Pearson correlations among reflective thinking, clinical learning, and professional self-confidence at posttest for the intervention group. Reflective thinking was positively and significantly correlated with clinical learning ($r = 0.62$, $p < 0.001$) and professional self-confidence ($r = 0.58$, $p < 0.001$). Clinical learning was also positively correlated with professional self-confidence ($r = 0.54$, $p < 0.001$). These correlations indicate that

students who engaged more deeply in reflective thinking also reported higher levels of clinical learning and professional self-confidence. While correlation does not establish causation, these findings are consistent with the theoretical framework and suggest that reflective thinking may be a mechanism through which structured journaling exerts its effects on clinical learning and confidence.

Discussion

The findings of this study demonstrate that structured reflective journaling significantly improved clinical learning, professional self-confidence, and reflective thinking among undergraduate nursing students at the College of Nursing, Nishtar Hospital, Multan. The intervention group outperformed the control group at posttest across all measured outcomes, and the effect sizes were large. These results support the view that clinical exposure alone is not sufficient to maximize learning and confidence; students also need structured opportunities to process and interpret their clinical experiences.

The improvement in clinical learning among students who completed reflective journals is consistent with experiential learning principles (Marshall et al., 2022). By writing about clinical situations, students were encouraged to move beyond simple description toward analysis, conceptualization, and future planning. In a busy tertiary-care hospital such as Nishtar Hospital, Multan, students may otherwise focus on completing tasks without fully examining the reasons behind clinical actions (Alkhaaldi et al., 2023). The journaling process appears to have helped them connect theory with practice and

derive deeper meaning from their ward experiences. This is particularly important in the Pakistani context, where clinical instructors often supervise large groups of students and may have limited time for individualized debriefing (Baresh, 2022).

The significant gain in professional self-confidence suggests that structured reflection helped students recognize their growing competence (Johns, 2022). When students documented successful patient interactions, procedures, and communication experiences, they created a record of mastery that may have reinforced their confidence (Bellew, 2026). The reflective process may also have helped them manage anxiety by expressing concerns in writing and receiving supportive instructor feedback. This is particularly important for second-year students in their first clinical practicum, who are often uncertain about their professional role. In the cultural context of Pakistan, where students may be hesitant to openly discuss their insecurities, reflective journaling provided a private and non-threatening outlet for expressing concerns and receiving guidance (Palla et al., 2024).

The very large improvement in reflective thinking indicates that the intervention successfully

developed a skill that is valuable for lifelong professional learning. Reflective thinking allows nurses to continuously learn from practice, adapt to complex clinical situations, and improve patient care. Developing this skill during undergraduate education may prepare students for the demands of contemporary nursing practice. The positive correlations between reflective thinking and both clinical learning and professional self-confidence further support the theoretical link between reflection and improved outcomes (Mount et al., 2022).

Both groups improved from pretest to posttest, which is expected because all students participated in clinical rotations (Quttainah et al., 2024). However, the greater improvement in the intervention group suggests that structured reflective journaling amplified the educational value of clinical placement. The ANCOVA results confirmed that the group effect remained significant after controlling for pretest scores, providing stronger evidence for the effectiveness of the intervention. The findings support the integration of reflective journaling into clinical nursing courses at the College of Nursing, Nishtar Hospital, Multan, and similar institutions.

This study has some limitations. The quasi-experimental design may not control for all confounding variables, although baseline equivalence and ANCOVA helped mitigate this limitation. The use of self-report instruments may introduce response bias, as students may have overestimated their clinical learning or confidence. The study was conducted in a single college and hospital setting over eight weeks, so findings may not be fully generalizable to other contexts. The long-term effects of the intervention on clinical competence and professional confidence remain unknown. Additionally, the study did not measure actual clinical performance or patient outcomes, which are important indicators of clinical competence.

Despite these limitations, the study has several strengths. It used a control group, collected both pre- and post-intervention data, used validated instruments with good reliability, and employed

rigorous statistical analysis including ANCOVA and effect size calculation. The findings contribute to the growing body of evidence supporting the use of structured reflective journaling in nursing education, particularly in resource-limited settings such as Pakistan.

Future research should address the limitations of the current study by employing randomized controlled designs where feasible, extending the intervention duration to examine long-term effects, and including objective measures of clinical competence in addition to self-report measures. Research should also explore the optimal structure and frequency of reflective journaling, the role of instructor feedback in enhancing reflection quality, and the potential benefits of incorporating peer reflection or group discussion alongside individual journaling. Additionally, studies should examine whether the benefits of structured reflective journaling extend to other important outcomes such as critical thinking, clinical judgment, and intention to remain in the nursing profession. Multi-center studies involving multiple nursing colleges in Pakistan would enhance generalizability.

Conclusion

Structured reflective journaling was effective in enhancing clinical learning, professional self-confidence, and reflective thinking among undergraduate nursing students at the College of Nursing, Nishtar Hospital, Multan. The intervention group demonstrated significantly higher posttest scores and greater pre-to-post improvement than the control group, with large effect sizes. ANCOVA controlling for pretest scores confirmed the robustness of these findings, and reflective thinking was positively correlated with both clinical learning and professional self-confidence. These findings indicate that structured reflective journaling is a practical, low-cost, and educationally valuable strategy for strengthening clinical learning and professional confidence during early clinical practicum.

Nurse educators at the College of Nursing, Nishtar Hospital, Multan, and similar teaching

institutions should consider incorporating structured reflective journaling into clinical courses. To implement this strategy effectively, several recommendations are offered. First, students should receive a clear orientation to reflective journaling, including the purpose, structure, and expectations. Second, clinical instructors should receive training on how to provide constructive feedback that encourages deeper reflection rather than simply evaluating clinical performance. Third, a structured template based on a recognized framework such as Kolb's experiential learning cycle should be used to guide students' writing. Fourth, sufficient time should be allocated for journaling and feedback within the clinical course schedule. Fifth, journals should not be graded in a way that discourages honesty, but completion should be required. Sixth, consideration should be given to offering students the option of writing in Urdu or English, depending on their comfort level, to ensure that language is not a barrier to reflection. Seventh, periodic evaluation of the journaling intervention should be conducted to monitor its effectiveness and make improvements.

In conclusion, this study provides strong evidence that structured reflective journaling is an effective pedagogical intervention for enhancing clinical learning and professional self-confidence among undergraduate nursing students. As nursing education continues to evolve to meet the demands of an increasingly complex healthcare environment, evidence-based strategies such as structured reflective journaling offer a practical and impactful approach to preparing confident, competent, and reflective nursing professionals. The integration of this approach into clinical curricula at the College of Nursing, Nishtar Hospital, Multan, and similar institutions represents a meaningful step toward optimizing the educational preparation of the future nursing workforce in Pakistan.

REFERENCE

- ALKHAALDI, S. M. I., KASSAB, C. H., DIMASSI, Z., ALSAUD, L. O., AL FAHIM, M., AL HAGEH, C. & IBRAHIM, H. 2023. Medical student experiences and perceptions of ChatGPT and artificial intelligence: cross-sectional study. *JMIR Medical Education*, 9, e51302.
- ALT, D., RAICHEL, N. & NAAMATI-SCHNEIDER, L. 2022. Higher education students' reflective journal writing and lifelong learning skills: Insights from an exploratory sequential study. *Frontiers in psychology*, 12, 707168.
- ARYUWAT, P., HOLMGREN, J., ASP, M., RADABUTR, M. & LÖVENMARK, A. 2024. Experiences of nursing students regarding challenges and support for resilience during clinical education: A qualitative study. *Nursing Reports*, 14, 1604-1620.
- AYUB, F., AFZAL, N., ALI, W., ASIF, F., UL HASSAN, S. S., HAQUE, G., AHMED, F. A., AJANI, K., THARANI, Z., JAFFER, M., HAIDER, A. H., ABOUMATAR, H. J. & LATIF, A. 2024. Exploring medical and nursing students' perceptions about a patient safety course: a qualitative study. *BMC Med Educ*, 24, 452.
- BARESH, E. F. 2022. Developing Libyan undergraduates' writing skills through reflective journaling: A critical literature review. *Journal of English Language Teaching and Learning*, 3, 27-35.
- BELLEW, I. 2026. Exploring Nursing Students' Experiences of Simulation-Based Learning in Developing Critical Thinking, Clinical Reasoning and Clinical Judgment in the Management of Mental Health Patients: A Qualitative Case Study.

- BORG, A., GEORG, C., JOBS, B., HUSS, V., WALDENLIND, K., RUIZ, M., EDELBRING, S., SKANTZE, G. & PARODIS, I. 2025. Virtual patient simulations using social robotics combined with large language models for clinical reasoning training in medical education: mixed methods study. *Journal of Medical Internet Research*, 27, e63312.
- CHAROKAR, K. & DULLOO, P. 2022. Self-directed learning theory to practice: a footstep towards the path of being a life-long learner. *Journal of Advances in Medical Education & Professionalism*, 10, 135.
- DONKIN, R., YULE, H. & FYFE, T. 2023. Online case-based learning in medical education: a scoping review. *BMC Medical Education*, 23, 564.
- ESTERON, J. V. 2026. Reflective journaling towards caring behaviors and compassionate empathy skills of students in clinical nursing. *Teaching and Learning in Nursing*.
- IZQUIERDO-CONDOY, J. S., ARIAS-INTRIAGO, M., TELLO-DE-LA-TORRE, A., BUSCH, F. & ORTIZ-PRADO, E. 2025. Generative artificial intelligence in medical education: enhancing critical thinking or undermining cognitive autonomy? *Journal of Medical Internet Research*, 27, e76340.
- JOHNS, C. 2022. *Becoming a reflective practitioner*, John Wiley & Sons.
- KARERA, A., KALONDO, L., AMKONGO, M. & IZAACS, L. 2023. Writing for reflection: radiography students' experiences with reflective journaling. *Radiography*, 29, 950-955.
- KHAKPAKI, A. 2025. Advancements in artificial intelligence transforming medical education: a comprehensive overview. *Medical education online*, 30, 2542807.
- KLEIN, H. J. & MCCARTHY, S. M. 2022. Student wellness trends and interventions in medical education: a narrative review. *Humanities and social sciences communications*, 9.
- KUNG, T. H., CHEATHAM, M., MEDENILLA, A., SILLOS, C., DE LEON, L., ELEPAÑO, C., MADRIAGA, M., AGGABAO, R., DIAZ-CANDIDO, G. & MANINGO, J. 2023. Performance of ChatGPT on USMLE: potential for AI-assisted medical education using large language models. *PLoS digital health*, 2, e0000198.
- LEE, M. D. G. B. & CHIU, M. D. A. M. 2022. Assessment and feedback methods in competency-based medical education. *Annals of Allergy, Asthma & Immunology*, 128, 256-262.
- LI, J., ZONG, H., WU, E., WU, R., PENG, Z., ZHAO, J., YANG, L., XIE, H. & SHEN, B. 2024. Exploring the potential of artificial intelligence to enhance the writing of english academic papers by non-native english-speaking medical students-the educational application of ChatGPT. *BMC Medical Education*, 24, 736.
- LIM, J. Y., ONG, S. Y. K., NG, C. Y. H., CHAN, K. L. E., WU, S. Y. E. A., SO, W. Z., TEY, G. J. C., LAM, Y. X., GAO, N. L. X. & LIM, Y. X. 2023. A systematic scoping review of reflective writing in medical education. *BMC Medical Education*, 23, 12.
- MARSHALL, T., KEVILLE, S., CAIN, A. & ADLER, J. R. 2022. Facilitating reflection: a review and synthesis of the factors enabling effective facilitation of reflective practice. *Reflective Practice*, 23, 483-496.
- MOUNT, G. R., KAHLKE, R., MELTON, J. & VARPIO, L. 2022. A critical review of professional identity formation interventions in medical education. *Academic Medicine*, 97, S96-S106.

- NYAKI, F. S. 2023. Testing the Efficacy of Integrated Conversational and Journaling Reflective Learning Strategies on Perceived Self-directed Learning and Clinical Reasoning Among Nursing Students Tanzania: A Quasi-experimental Study.
- PALLA, I., TURCHETTI, G. & POLVANI, S. 2024. Narrative Medicine: theory, clinical practice and education-a scoping review. *BMC Health Services Research*, 24, 1116.
- PREIKSAITIS, C. & ROSE, C. 2023. Opportunities, challenges, and future directions of generative artificial intelligence in medical education: scoping review. *JMIR medical education*, 9, e48785.
- QUTTAIAH, M., MISHRA, V., MADAKAM, S., LURIE, Y. & MARK, S. 2024. Cost, usability, credibility, fairness, accountability, transparency, and explainability framework for safe and effective large language models in medical education: narrative review and qualitative study. *Jmir Ai*, 3, e51834.
- RUKADIKAR, C., MALI, S., BAJPAI, R., RUKADIKAR, A. & SINGH, A. K. 2022. A review on cultural competency in medical education. *Journal of family medicine and primary care*, 11, 4319.
- SAFRANEK, C. W., SIDAMON-ERISTOFF, A. E., GILSON, A. & CHARTASH, D. 2023. The role of large language models in medical education: applications and implications. JMIR Publications Toronto, Canada.
- TSENG, Y.-C. & LIN, Y.-H. 2024. Enhancing English as a Foreign Language (EFL) Learners' Writing with ChatGPT: A University-Level Course Design. *Electronic Journal of e-Learning*, 22, 78-97.
- VRDOLJAK, J., BOBAN, Z., VILOVIĆ, M., KUMRIĆ, M. & BOŽIĆ, J. A review of large language models in medical education, clinical decision support, and healthcare administration. 2025. MDPI, 603.