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Effectiveness of high-fidelity simulation on practice, satisfaction, and self-confidence among nursing students in mental health nursing class

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Abstract

Objective The purpose of the study was to evaluate the efficacy of employing high-fidelity simulation (HFS) in enhancing mental health nursing students' practice, satisfaction, and self-confidence in contrast to a group of students undergoing traditional nursing education methods.

Methods A quasi-experimental pre and post-test, two groups study was conducted from March to June 2024. The study conducted with 75 nursing students from Arab American University Palestine and An-Najah National University. The Educational Practices Questionnaire-Curriculum and Learner Satisfaction and Self-Confidence in learning method were used to assess nursing students' practice, satisfaction, and self-confidence. Normality of data was confirmed using Shapiro-Wilk test. Statistical t-tests were used to compare between the two groups.

Result The results revealed significant differences in the educational practice, satisfaction, and self-confidence scores between the experimental and control groups ($p < 0.05$). Specifically, the educational practice scores in the experimental group (M = 73.3 ± SD 5.62) was higher than that in the control group (M = 61.4 ± SD 6.82). Also, the mean of the student's satisfaction scores in the experimental group (M = 21.8 ± SD 2.35) was higher than that in the control group (M = 18.1 ± SD 4.84). Furthermore, the mean of the student self-confidence scores in the experimental group (M = 35.9 ± SD 3.47) was higher than that in the control group (M = 29.1 ± SD 6.69).

Conclusion The study supports using high-fidelity simulation alongside clinical site experiences to link nursing knowledge and practice. Consequently, mental health nursing students' benefit from advanced training that maintains their competency, theoretical knowledge, clinical judgment, collaborative functioning, leadership, and communication skills. While high-fidelity simulation enhances learning in mental health nursing education, it should be viewed as a complementary approach rather than a replacement for actual clinical placements.

Clinical trial number Not applicable.

Keywords High-fidelity simulation, Practice, Satisfaction, Confidence, Mental health nursing

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Introduction

Technological innovations in healthcare have become essential for both patient care and education [1]. As a result, nurse educators are increasingly incorporating technology into nursing curricula to enhance the quality of education and training [2, 3]. Nursing, as a discipline, requires an integration of cognitive, affective, and psychomotor skills [4, 5]. Advanced technologies, such as high-fidelity simulation (HFS), have emerged as valuable tools in improving learning outcomes [6, 7]. In Palestine, HFS has been integrated into the nursing curriculum for most nursing courses, but its application in psychiatric nursing education remains limited.

A primary objective of nursing education programs is to prepare future nurses to meet the healthcare needs of communities [8]. High-quality nursing education must adhere to global standards to ensure competency and effectiveness [9, 10]. Traditional teaching methods, which rely on instructor-led lectures and passive student participation, often fail to meet modern healthcare demands [11]. Innovative teaching strategies, such as HFS, enable nursing students to take on more active roles in their education and practice, making them more adaptable and receptive to advancements in healthcare [12].

HFS is an interactive teaching-learning method widely used in various fields, including aviation, engineering, and industrial training, in addition to nursing [13]. The growing popularity of HFS is attributed to its high level of applicability and effectiveness in replicating real-world experiences [14]. Nursing students recognize the benefits of HFS, as it enhances knowledge retention, skill development, and decision-making abilities [15, 16]. Research suggests that HFS represents the future of nursing education and training, offering an innovative approach to improving learning outcomes [17].

Simulation, broadly defined, involves replicating real-life tasks, relationships, and decision-making processes [18]. Simulation is not merely a technology but a technique that provides immersive and interactive learning experiences [19]. Similarly, Gorski et al. describes simulation as an educational activity designed to reflect real clinical environments, enabling students to practice procedures, develop critical thinking skills, and engage in role-playing scenarios [20]. HFS significantly enhances nursing education by boosting students' confidence and offering a safe environment where they can practice clinical procedures without risking patient safety [21].

Nursing education combines theoretical knowledge with practical training, covering a broad spectrum of human health and illness [22]. Teaching strategies play a crucial role in shaping students' abilities in critical thinking, clinical decision-making, and psychomotor skills [17, 23]. Nurse educators can use HFS to create structured learning experiences, provide feedback, and manage environmental factors to optimize student teaching [24]. Simulation-based learning activities range from basic procedural training to complex clinical case studies, equipping students with essential problem-solving skills [25].

Mental health nursing education presents unique challenges that differentiate it from other nursing specialties. Unlike physical health nursing, which often focuses on visible symptoms and procedural interventions, mental health nursing requires students to develop strong therapeutic communication skills, empathy, and the ability to manage unpredictable patient behaviors. These distinctive aspects make traditional clinical placements in psychiatric settings particularly challenging [26].

In psychiatric nursing, HFS has been found to improve students' knowledge, confidence, and skills to manage mental health conditions [27]. It provides an opportunity for students to gain hands-on experience, enhance clinical reasoning, and develop decision-making skills [26]. Since clinical settings in mental health nursing are often limited, HFS serves as a valuable tool for simulating real-world psychiatric care scenarios, allowing students to practice in a controlled and structured setting [28]. By integrating technology with guided reflection, HFS enhances cognitive, affective, and decision-making skills in psychiatric nursing education [29]. Research indicates that the use of HFS in mental health nursing is a key factor in improving student satisfaction, confidence, and overall practice [30]. Additionally, HFS helps students navigate the complexities of psychiatric care, streamline clinical workflows, and enhance patient care delivery [31].

Clinical training in mental health units can be challenging for both students and patients [32]. Cultural factors also play a role. Mental illness remains highly stigmatized in Palestinian society, which affects both patient access to care and students' perceptions of psychiatric nursing. Furthermore, psychiatric nursing courses are typically limited to 3–5 credit hours, which may be insufficient for adequately preparing students for real-world practice. Many psychiatric nursing students struggle with low self-confidence and satisfaction due to a lack of exposure to real psychiatric settings [33]. HFS helps bridge this gap by offering realistic simulations that enhance students' preparedness and provide valuable role models during their clinical rotations [34]. By filling this gap, Palestinian nursing education can move toward producing competent, confident, and compassionate mental health nurses equipped to serve their communities effectively. Therefore, the purpose of this study was to evaluate the effectiveness of high-fidelity simulation in enhancing the practice, satisfaction, and self-confidence of mental health nursing students.

This study was guided by the following research questions: (1) Does high-fidelity simulation improve educational practice scores among mental health nursing students compared to traditional teaching methods? (2) Does high-fidelity simulation enhance satisfaction level among mental health nursing students compared to traditional teaching method? (3) Does high-fidelity simulation increase self-confidence among mental health nursing students compared to traditional teaching method?

Methods

Study design

This study utilized a quasi-experimental, two-group pre-test/post-test design, conducted between March and June 2024.

Sample and setting

This study was conducted at Arab American University Palestine (AAUP) and An-Najah National University, two Palestinian universities located in the northern region of the West Bank. The simulation experience took place at the simulation center established by the Faculty of Nursing at AAUP. The study participants were undergraduate nursing students enrolled in a psychiatric mental health nursing course at AAUP and An-Najah National University. AAUP was randomly assigned as the experimental group, while An-Najah National University served as the control group. Sample size calculations were performed using G*Power version 3.0.10, based on a t-test with a power of 0.95, an effect size of 0.5, and an alpha level of 0.05, determining a required sample of 54 participants. This calculation was based on previous similar studies [17, 35], which reported medium to large effect sizes for simulation interventions in nursing education. To account for potential attrition, a total of 80 students were recruited.

The inclusion criteria required participants to (a) be nursing students, (b) be enrolled in a psychiatric mental health nursing course for the first time, and (c) express willingness to participate. Conversely, students diagnosed with or having a history of mental illness, as well as bridging nursing students, were excluded to prevent personal experiences from influencing their attitudes and intended behaviors.

Instruments

A self-reported questionnaire was used to collect data, consisting of three main components. The first section gathered demographic information, including participants' age, gender, and general point average (GPA).

The second component, the Educational Practices Questionnaire-Curriculum (EPQ-C), is a 22-item instrument using a five-point Likert scale. It evaluates whether learners perceive the presence of seven key educational practices—student-faculty interaction, collaborative learning, active learning, feedback, time on task, high expectations, and diverse learning—within instructor-developed educational experiences [36]. These educational practices are based on Chickering and Gamson's framework [37]. Scores are computed by summing the responses, with higher scores indicating a greater recognition of best educational practices in simulations. This study utilized only the first part of the EPQ-C, which reflects the presence of specific practices. Reliability testing demonstrated strong internal consistency (Cronbach's alpha = 0.94) [36].

The final component, the Learner Satisfaction and Self-Confidence in Learning (LSSCL) scale, developed by the National League for Nursing, consists of 13 items on a five-point Likert scale [38]. It is divided into two subscales: satisfaction with learning (five items, scores ranging from 5 to 25) and self-confidence in learning (eight items, scores ranging from 8 to 40), with higher scores indicating greater satisfaction and self-confidence. In this study, the Cronbach's alpha coefficients for the LSSCL subscales were satisfactory (satisfaction = 0.92, self-confidence = 0.89). This scale is widely used in research on simulation-based learning [30, 39, 40]. Both instruments are available for educational and research purposes, and permission to use these instruments was obtained from the National League for Nursing.

The intervention

The simulated scenario was designed in alignment with the Best Practices set forth by the INACSL Standards [41]. The objectives of the scenario were to conduct a focused mental health assessment, assess a patient for psychosis with an emphasis on delusions and hallucinations, differentiate between the positive and negative symptoms of schizophrenia, and apply therapeutic communication techniques when interacting with a patient experiencing psychotic symptoms.

The intervention comprised three key phases: pre-briefing, simulation, and debriefing. During the pre-briefing phase, students received preparatory materials two weeks before the simulation to create a psychologically safe learning environment and support knowledge consolidation [42]. The preparatory materials included: (1) a comprehensive theoretical framework on schizophrenia covering pathophysiology, clinical manifestations, assessment techniques, and evidence-based nursing interventions; (2) reading materials on therapeutic communication techniques specific to patients experiencing psychotic symptoms; (3) a case study guide with questions prompting critical thinking and clinical reasoning; and (4) a pre-simulation quiz to ensure students had reviewed the necessary theoretical content. They

were provided with an instructional document detailing the simulation scenario, allowing them to develop an evidence-based approach. The case scenario involved a patient diagnosed with schizophrenia, enabling students to apply theoretical knowledge in a controlled, experiential learning setting.

The simulation phase commenced with a five-minute briefing session, during which students were provided with a concise summary of the clinical case, including relevant background details. The 30-minute simulated scenario featured a 28-year-old male patient diagnosed with schizophrenia ten years ago and major depression five years ago. Adapted from the National League for Nursing (NLN) library (https://scenariocloud.laerdal.com/library/scenario/schizophrenia-part-1-science-update-2022), the scenario required students to conduct a focused mental status assessment, evaluate the patient's thought processes—particularly delusions and hallucinations—orient the patient to reality, monitor nutritional status, and ensure a safe environment for both the patient and healthcare providers.

Throughout the session, the patient, referred to as David, exhibited a calmer demeanor in response to therapeutic reassurance and student support. The simulation took place in a controlled environment equipped with active cameras and microphones to capture the session. Students engaged in repeated practice of their roles until they developed confidence in their performance.

Following the simulation, a debriefing session (30 min) was conducted to analyze and reflect on the experience [43]. Using the gather, analyze, and summarize (GAS) debriefing model [44]. Students reviewed evidence-based practices, discussed effective interventions, and identified errors and areas for improvement. Trained nursing instructors provided feedback, ensuring a structured learning experience and reinforcing key clinical concepts.

Data collection procedure

The researchers invited nursing students to participate in the study by posting an announcement on the student board in coordination with the nursing faculty dean. Interested students were provided with detailed information about the study, including printed materials outlining the study timeline. Participants were then randomly assigned to either the study or control group. To minimize the risk of contamination between groups, the study was conducted in two distinct phases.

In Phase I, the control group attended a three-hour lecture on schizophrenia, which covered the disorder's psychopathology, factors influencing patient care, strategies for creating a safe environment, and the application of a nursing care plan. This was followed by two weeks of traditional clinical practice in a mental hospital setting. Upon completing their clinical practice, participants in the control group completed a questionnaire assessing their learning experience.

In Phase II, the study group received the same three-hour lecture on schizophrenia, followed by two weeks of traditional clinical practice. However, in addition to these activities, they also participated in a simulation-based learning session. The study group was divided into nine teams, each consisting of four students assigned to specific roles: primary nurse, secondary nurse, physician, and family member. Following the simulation session, participants completed the same questionnaire to evaluate their experience (Fig. 1).

To ensure consistency in the educational experience across both institutions, the same instructor delivered the theoretical content at both universities. The clinical placements were conducted at the same mental health facility for both groups. Additionally, the simulation scenarios and debriefing sessions were standardized using the INACSL Standards for Best Practice in Simulation, ensuring that all students in the experimental group received the same quality and type of simulation experience.

Ethical considerations

Ethical approval for this study was granted by the Research Ethics Committee at the Arab American University (Reference No. 2023/A/151/N). Based on this approval, permission to conduct the study was also obtained from An-Najah National University in alignment with its internal policies. The study adhered to the ethical principles outlined in the Declaration of Helsinki. The researchers identified potential participants among the students and provided a clear explanation of the study's purpose. Students who met the inclusion criteria and agreed to participate received a detailed description of the research. They were informed that participation was entirely voluntary and that they could withdraw from the study at any time without consequences. Additionally, they were assured that the risks associated with participation were no greater than those encountered in standard simulation exercises and that their confidentiality would be maintained.

Informed consent to participate was obtained from all of the participants in the study. Although the researchers were familiar with both study groups, participant names were stored on a computer without backup to protect their privacy. To uphold ethical standards, a waitlist control group approach was implemented, ensuring that, upon completion of the study, the control group received the same simulation experience as the study group.

Data analysis

Data were analyzed using SPSS 23.0 software. Descriptive and inferential statistics were used. Prior to analysis, data

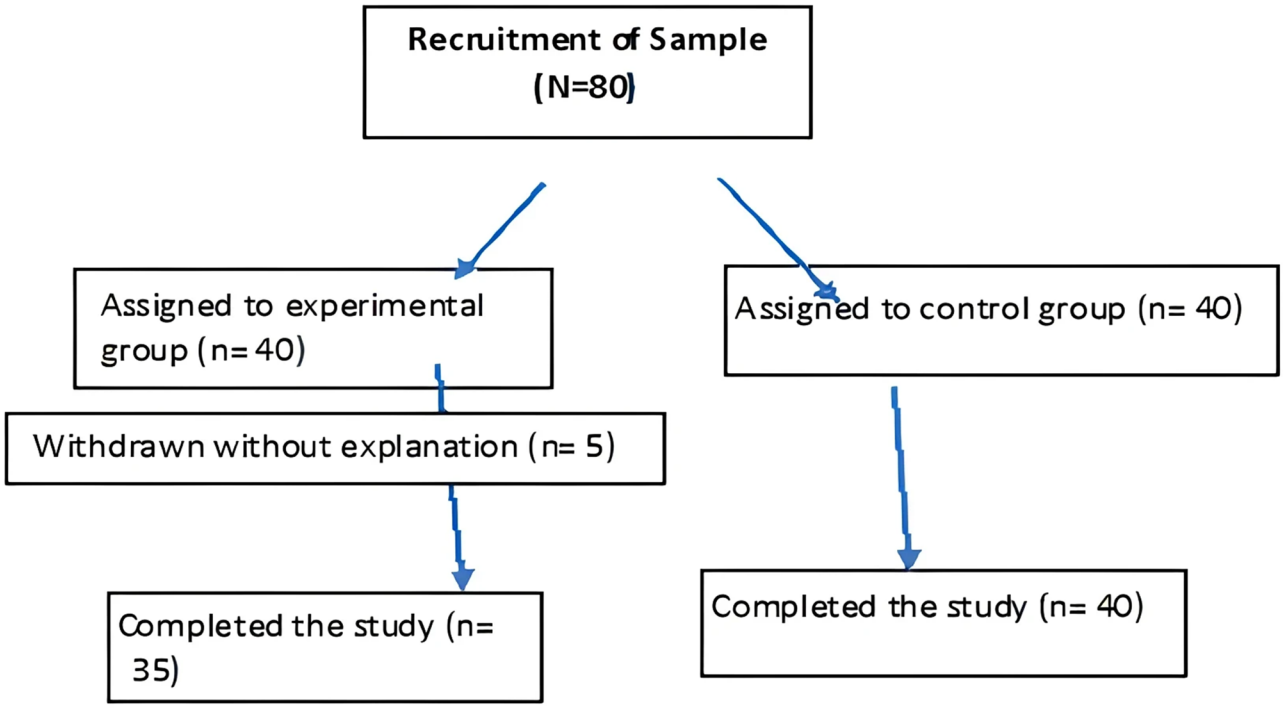

Fig. 1 Sampling and flow of subjects through the study

Table 1 Comparison between socio-demographics of the participants in both groups (*N* = 75)

Characteristics		Total M(SD)	Experiment M(SD)	Control M(SD)	Statistical test	*p*. value
Age		21.7(0.98)	21.8(0.97)	21.6(0.99)	t = 1.107	*0.272*
GPA		2.9(0.47)	3.0(0.47)	2.8(0.46)	t = 1.473	*0.145*
			n(%)	**n(%)**		
Gender	Male	37(49.3)	17(48.6)	20 (50.0)	**X^2 = 0.015**	*0.902*
	Female	38(50.7)	18 (51.4)	20 (50.0)		

Note: P. value significant at the 0.05 level, GPA, General point average

were tested for normality using the Shapiro-Wilk test, which confirmed that the study variables were approximately normally distributed ($p > 0.05$). The homogeneity of the two groups in terms of demographic and study variables were determined using the Chi-squared test and an independent t-test at pretest. An independent t-test was used to compare the differences between the two groups at posttest. A p-value of less than 0.05 was considered statistically significant.

Results

Description of the partcipants characteristics

Seventy-five nursing students met the eligibility criteria and agreed to participate in the study. Five students withdrew during the study period, resulting in a final sample of 75 (35 in the experimental group and 40 in the control group). The analysis revealed that the average age of the students was 21.7 ± 0.98 years old. Approximately more than half of them 38 (50.7%) were females and the average of the GPA was 2.9 ± 0.47. Also, the independent t-test and chi-square analyses revealed no significant differences between the experimental and control groups regarding socio-demographic data ($p > 0.05$), as displayed in Table 1.

Table 2 Comparisons of the variables at pre-test (*N* = 75)

Outcomes	Control M(SD)	Experimental M(SD)	t test	*p*. value
Educational practice	55.3(8.65)	55.6(9.49)	0.169	0.866
Student satisfaction	17.1(2.24)	16.7(2.08)	−0.762	0.449
Student confidence	27.3(3.57)	26.5(3.00)	−0.995	0.323

P. value significant at the 0.05 level

The analysis revealed no significant differences between both groups regarding the variables at pretest ($p > 0.05$), as seen in Table 2.

The analysis revealed a significant difference in the educational practice scores between the experimental and control groups ($p < 0.05$). Specifically, the mean of the educational practice scores in the experimental group (M = 73.3 ± SD 5.62) was higher than that in the control

group (M = 61.4 ± SD 6.82). Additionally, the subscales of educational practice showed significant statistical differences between the experimental and control groups ($p < 0.05$).

The analysis revealed a significant difference in the mean scores of student satisfaction between the experimental and control groups ($p < 0.05$). Specifically, the mean of the student satisfaction scores in the experimental group (M = 21.8 ± SD 2.35) was higher than that in the control group (M = 18.1 ± SD 4.84).

The analysis revealed a significant difference in the mean scores of student self-confidence between the experimental and control groups ($p < 0.05$). Specifically, the mean of the student self-confidence scores in the experimental group (M = 35.9 ± SD 3.47) was higher than that in the control group (M = 29.1 ± SD 6.69), as detailed in Table 3.

Table 3 Difference in educational practice between experimental and control groups at post-test

Variable	Control	Experimental	t test	*p*. value
	M(SD)	M(SD)		
Educational practice	61.4(6.82)	73.3(5.62)	8.259	0.001*
Active learning	37.8(4.59)	45.7(3.58)	8.262	0.001*
Collaboration	7.8(1.31)	8.7(1.36)	3.138	0.002*
Diverse Ways of Learning	8.1(1.27)	9.5(0.74)	5.885	0.001*
High Expectations	7.8(1.64)	9.4(0.81)	5.475	0.001*
Student satisfaction	18.1(4.84)	21.8(2.35)	4.112	0.001*
Student confidence	29.1(6.69)	35.9(3.47)	5.354	0.001*

P. value significant at the 0.05 level

Discussion

The findings showed that the students' educational practices in the experimental group increased after HFS. According to the results students in the experimental group averaged higher scores in academic achievement compared to those in the traditional instructions group, and this difference was statistically significant. The increase in the experimental group's scores indicated that HFS is an effective in improving educational practices. This is particularly significant in the context of mental health nursing education, where students often struggle with the abstract nature of psychiatric concepts and the unique challenges of therapeutic communication with patients experiencing psychological distress.

In Arab and Palestinian cultures, education is highly valued and considered a pathway to better opportunities and societal contributions [45]. The improvement in educational practices suggests that students are responsive to innovative and effective teaching methods, which aligns with the cultural emphasis on educational attainment. Also, HFS represents a modern, technology-driven approach to education. The positive response to high-fidelity simulation indicates openness to adopting new teaching methodologies that enhance learning outcomes. The findings of this study confirmed results from previous studies. Similarly, and sustaining using of HFS as an educational tool, a total of 15 studies were included meta-analysis study conducted by [46] indicated that high-fidelity simulation significantly increased nursing students' knowledge acquisition, and enhanced nursing students 'professional skills. A similar result by Al-Amrani, et al. study indicated improvement in critical thinking at the posttest than the pretest in the simulation group [35]. Also, Ayed et al. noticed a significant change in clinical decision-making among students after pediatric health nursing simulation more than traditional practice [6]. Additionally, a significantly larger proportion of students in the experimental group than in the control group increased the number of correct responses in their knowledge post-HFS intervention [47]. Moreover, a systemic review composed of 15 studies indicated that HFS significantly improved nursing students' knowledge and communication skills. HFS also significantly boosted critical thinking skills and clinical judgment abilities. Also, HFS increased theoretical-practical learning [48–51] and improved psychomotor skills [52–54]. In addition, improvements have been obtained in teach [55], the acquisition of competencies, and self-efficacy [56]. Therefore, nursing students acquire knowledge in patient care, psychomotor skills, problem-solving, professional communication, and critical thinking. Another study showed that HFS improved practice when managing airways [57]. They also promote their socializing and confidence in their professional roles [58]. Furthermore, Sullivan et al. reported that students who participated in HFS demonstrated significant improvements in knowledge, which is an essential component of educational practices [59]. On the other hand, Guerrero et al. substantiates our results and reported that HFS exposure improves nursing interns' clinical practice, which can help boost their competency [60]. In the specific context of mental health nursing education, our findings align with García-Mayor et al. [61], who found that simulation-based learning using objective structured clinical examination (OSCE) significantly improved nursing students' clinical skills in psychiatric settings. Similarly, Kunst et al. [26] reported that manikin simulation in mental health nursing education enhanced students' communication skills and confidence when working with patients experiencing acute mental health crises.

Also, the results showed that students in the experimental group averaged significantly higher on satisfaction than those in the traditional lectures. This could be because HFS improved critical thinking and the sensation of being more qualified in clinical practice. This can be attributed to appreciation for innovative approaches that improve educational outcomes, and experiencing a

new and effective method of learning may have contributed to higher satisfaction. Moreover, the intervention method likely allowed for more direct engagement with instructors, which is highly valued in these cultures, leading to increased student satisfaction. The results of the current study were consistent with results from the previous studies as in a quasi-experimental study conducted by Toqan et al. who evaluated the effect of using simulation-based scenarios on pediatric nursing students' satisfaction, and self-confidence [30]. Students' satisfaction scores were greater after the simulation training. Also, several studies supported the current results. Several previous studies showed overall satisfaction among nursing students after HFS experience [61–63]. Another study, done by Saied found that students were satisfied with the simulation experience and that their self-confidence levels improved following the simulation [64].

Furthermore, the analysis revealed that students in the experimental group had a higher mean score of confidence than those who received training using traditional lectures. This can be explained by the interactive and practical nature of the intervention method, which likely provided students with more hands-on experience and real-world applications of their knowledge. Such methods can enhance students' understanding and mastery of the material, leading to increased self-confidence. Moreover, simulation encourages active engagement, allows for repetitive practice, and offers immediate instructor feedback, all of which contribute to improve clinical reasoning, decision-making, and ultimately, self-confidence in performing nursing tasks. The simulation sessions in this study likely allowed students to safely explore and manage complex psychiatric scenarios, such as interacting with patients in acute distress experiences that are often difficult to obtain during traditional clinical placements due to limited access and safety concerns. These findings are consistent with a growing body of literature supporting the effectiveness of simulation in enhancing learner confidence. For instance, Alharbi [65] reported a notable increase in students' self-confidence following simulation training. Similarly, Sapyta and Eiger [66] found statistically significant improvements in student confidence after participation in simulation exercises. Tawalbeh and Tubaishat [67] also demonstrated that simulation training significantly improved confidence in performing Advanced Cardiovascular Life Support (ACLS). In the context of pediatric nursing, Lubbers and Rossman [49] found that students trained with pediatric simulations reported higher levels of self-confidence compared to those receiving conventional instruction.

These findings collectively emphasize the value of interactive and practical learning experiences in nursing education, highlighting their role in fostering greater self-confidence among students. Specifically in mental health nursing contexts, our results parallel findings from Happell et al. [68], who reported that simulation-based learning significantly increased nursing students' confidence in working with patients experiencing acute mental health crises. Similarly, Levett-Jones et al. [69] found that mental health simulation improved students' confidence in recognizing and responding to patients with psychiatric conditions.

Strengths and limitations

The study's strengths lie in its use of a quasi-experimental design, random assignment of participants, and standardized simulation procedures, along with a controlled environment for data collection and a consistent instructor throughout the study. Additionally, the use of validated and reliable questionnaires to assess educational practices, self-satisfaction, and self-confidence contributes to the study's reliability and validity. However, several limitations should be noted. First, the study being conducted at two different institutions may have introduced variables that could affect the homogeneity of the student groups, such as differences in faculty teaching styles, institutional cultures, and prior student experiences with simulation. Second, although efforts were made to standardize the educational experience across both institutions, inherent differences between the universities might have influenced the results. Third, the relatively short follow-up period does not allow assessment of the long-term retention of the benefits observed. Finally, the use of self-reported measures may introduce bias, as students might report what they believe researchers want to hear rather than their actual experiences.

Recommendations

To enhance the generalizability of the study findings, it is recommended that future studies replicate this research with a broader, more representative sample drawn from various universities across Palestine and neighboring regions. Additionally, future research should employ a randomized controlled trial design with individual randomization rather than institutional assignment to experimental and control conditions.

While this study focused on educational practices, self-confidence, and satisfaction, additional variables should be examined in future research, such as teacher factors, simulation design characteristics, and their impact on learning outcomes. Objective measures of clinical performance should also be incorporated alongside self-reported measures to provide a more comprehensive evaluation of simulation effectiveness.

Moreover, further research should investigate whether the positive effects of simulation endure over time and if these improvements translate into real clinical practice, as the current study did not examine the

long-term sustainability of the outcomes. Longitudinal studies tracking students from simulation experiences through actual clinical placements would provide valuable insights into the transferability of simulation-based learning to real-world settings.

Conclusion

The current study confirmed that HFS can be an effective teaching method, offering a safe and effective learning environment for mental health nursing students. This approach enhances their educational practices, satisfaction, and confidence. The study supports using HFS alongside clinical site experiences to link nursing knowledge and practice. Consequently, mental health nursing students' benefit from advanced training that maintains their competency, theoretical knowledge, clinical judgment, collaborative functioning, leadership, and communication skills.

While the integration of simulators in the mental health nursing curriculum can enhance the educational experience, it should be viewed as a complementary approach rather than a replacement for actual clinical placements. Simulation provides a controlled environment for students to practice and refine their skills, but the complexities of real patient interactions in mental health settings cannot be fully replicated in simulation scenarios.

Research indicates that students preferred role-playing during simulation-based active learning, leading to enhancements in their educational approaches, personal gratification, and self-assurance when compared to conventional learning techniques. This is particularly relevant in mental health nursing education, where therapeutic communication and interpersonal skills are paramount to effective patient care.

Abbreviations

AAUP	Arab American University Palestine
ACLS	Advanced Cardiovascular Life Support
EPQ-C	Educational Practices Questionnaire-Curriculum
GAS	Gather, analyze, and summarize
GPA	General Point Average
HFS	High Fidelity Simulation
NLN	National League of Nursing
OSCE	Objective Structured Clinical Examination

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Author contributions

N.J, A.A, A.M, L.H designed the study. N.J, L.H collected the data. A.A, A.M analyzed the data. All authors prepared the manuscript. All authors approved the final version for submission.

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Data availability

The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on a reasonable request.

Declarations

Ethics approval and consent to participate

This study employed a quasi-experimental design, which does not involve clinical interventions requiring registration as a clinical trial. Therefore, a clinical trial registration number is not applicable. Ethical approval for this study was granted by the Research Ethics Committee at the Arab American University (Reference No. 2023/A/151/N). Based on this approval, permission to conduct the study was also obtained from An-Najah National University in alignment with its internal policies. The study adhered to the ethical principles outlined in the Declaration of Helsinki. Informed consent was obtained from all participants prior to data collection. Participants were clearly informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without penalty. Confidentiality and anonymity were rigorously maintained throughout data collection, analysis, and reporting processes.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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