Effect of Integrating Peer Education and Role-Play on Pediatric Nursing Students' Practices, Self-confidence, and Satisfaction

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Abstract

Background. Supported models now need to be included in nursing education in addition to traditional methods. Integrating peer education and role-play creates an interactive and captivating educational experience. Students can learn from one another, develop new skills, and build confidence in a safe and supportive environment. **Aim.** Evaluate the effect of integrating peer education and role-play on pediatric nursing students' practices, self-confidence, and satisfaction. **Design**. A quasi-experimental research design was utilized. **Subjects**. A purposive sample was used including a hundred students from the third year, enrolled in the pediatric nursing course. **Setting**. The study was carried out in a pediatric nursing skills lab at Helwan University in Egypt's Faculty of Nursing. **Tools**. Four tools were used for data collection: a structured questionnaire, clinical evaluation checklist, self-confidence and satisfaction scale, and practical skills training method preferences questionnaire. **Results**: The study group exhibited a higher mean score of knowledge about peer education and role-playing than the control group with a statistically significant difference ($p < 0.001$). Also, the majority of pediatric nursing students in the study group are more competent in intramuscular injection and gavage feeding practice than the control group. Furthermore, the study group exhibited a significantly higher mean of self-confidence and satisfaction scores than the control group. **Conclusion.** Peer education and role-play proved to be more effective than traditional teaching methods for pediatric nursing students to gain competence in intramuscular injection and gavage feeding. Additionally, the study group students were more confident and satisfied with this training method. **Recommendation.** Using peer education and role-play in the skills lab to train on all pediatric nursing procedures.

Keywords: Pediatric Nursing Students, Peer education, Practices, Role-play, Satisfaction, Self-confidence.

Introduction

Nursing education courses consist of theoretical and practical learning. To achieve learning outcomes, both should combine at the same time. Fifty percent of nursing education focuses on clinical training. Student practice of skills in a hospital-like setting can be found in nursing skills laboratories that enable students to overcome the gap between theory and clinical practice while preparing them for the clinical setting **(Sanad et al., 2023)**.

The main challenge facing nursing education is preparing graduates for the complexity of the modern healthcare system **(El-deen et al., 2020)**. From the past to the present, nursing education has been centered on traditional learning methods that place the student in a passive position **(Senyuva & Akince, 2020)**. Use of creative and collaborative teaching methods, where students participate in active learning processes, has increased recently to create a more suited learning environment **(Bahar et al., 2022)**.

In the last twenty years, there have been increased concerns and attention regarding the learning environment in practical nursing education **(Shaaban & Mohamed, 2020)**, and today supportive models must be incorporated into nursing education alongside conventional approaches in order to help students improve their laboratory and clinical skills. One of these models utilized in skill training is a peer education (**Su & Vicdan, 2022)**. It enables students to acquire knowledge and skills from each other by collaborating **(Shaaban & Mohamed, 2020)**.

In the peer education paradigm, one or more students in the same group receive instructions from a more expert student. Without the help of educators, nursing students assist and instruct one another in this kind of clinical practice model. Peer education provides students with a chance to engage in critical thinking,

problem-solving, and participation **(Sanad et al., 2023)**.

Peer education increases students' engagement in clinical training and develops their competencies through interpersonal contact. It is sometimes referred to as peer mentorship, peer tutoring, or peer instruction, and it calls on students to reciprocally share their thoughts, experiences, and knowledge. The peer teaching method improves students' experiences with self-learning by providing peer evaluation, which is beneficial for increasing students' accountability and capacity for acquiring professional competencies **(Shaaban & Mohamed, 2020)**.

One useful teaching strategy that encourages active learning is role-playing. Unlike traditional techniques, which present the trainee with sporadic opportunities to gain experience, this approach allows the learner to engage in an organized clinical situation. Role-playing has many benefits, including reduced training periods and costs, improved student achievement, enhanced decision-making abilities, encouraged critical thinking, reduced tension, and strengthened students' confidence **(Dorri et al., 2019)**. Additionally, implementing that method encourages students to apply the nursing concepts and take on a professional role **(Ahmady et al. 2021).**

Role-playing is an efficient and common approach for teaching communication skills, particularly when obtaining patients' histories and communicating with healthcare providers. With this method, students can apply recently learned procedures in a safe environment without putting real patients and their families in danger. It is a useful tool for applying previously acquired healthcare information in clinical settings and consolidating it. Only a few research has been conducted in this field **(Xu et al., 2023)**.

Confidence and satisfaction are crucial factors that influence learning. To be ready to tackle the challenge of clinical difficulties in their future careers, nurses need to be able to successfully manage the demands of critical thinking and problem-solving at the educational level (**Studnicka et al., 2023)**.

In pediatric clinical training, students' self-confidence is very important due to the fact that students are always worried when they begin engaging in these courses, children's tiny size and greater sensitivity than adults are the causes of this. Additionally, parents are frequently present when providing care, which can worry and intimidate nursing students **(El-deen et al., 2020)**. It is a crucial component of learning achievement as well as social, educational, and personal development. Students who possess self-confidence are more likely to excel academically, interact well with others, and be more willing to take on challenges and try new things, including presenting directly in front of the class **(Akbari & Sahibzada, 2020).**

Students who lack confidence in themselves are more likely to experience poor academic performance **(Yafie et al., 2020)**. Also, it impairs students' bravery to voice their thoughts and ask questions as well, they exhibit a fear of taking on new responsibilities and following the instructor's lead ***(Rais & Marjohan, 2020)***. Therefore, Teachers should create a positive, attractive educational environment, show students respect and trust, and assist them in becoming more satisfied and confident in themself **(Ulum et al., 2021)**.

Significance of the study

Nowadays, clinical training skills have become more complex and need nursing education to respond properly by applying recent curriculum objectives and encouraging creative teaching strategies to prepare professional nursing graduates to meet the accelerating demands. Peer education may hold promise as a cost-effective learning method. Furthermore, with the large student numbers and the financial costs for the universities, the peer education method may resolve this issue as a cost-effective way to permit feedback and practice error correction while lowering the demand for faculty **(Shaaban & Mohamed, 2020)**.

There are only a limited number of studies in the world and in Turkey, in which the peer mentoring model was directly used in teaching psychomotor skills and compared with existing teaching methods (**El-deen et al., 2020)**. Despite these significant facts about peer teaching, no previous studies have been conducted in the Kingdom of Saudi Arabia to integrate this strategy into nursing education

(Sanad et al., 2023). Also, the role-playing method of education has not been broadly utilized in the clinical training of pediatric trainees **(Xu et al., 2023)**.

The researchers view that concerns and attention to the learning environment in practical nursing education have grown. In addition to traditional methods, supportive models now need to be involved in nursing education. Clinical skills are taught using a modeling method where students mimic an academic demonstration of a skill. However, due to time restrictions, limited engagement among students, a huge number of students, increased teacher demand, and inadequate faculty resources, this strategy may have an adverse effect on students' education and learning. Therefore, to tackle this problem and enhance students' active learning, the researchers began integrating peer education and role play in practical skill training in this study to evaluate its effect on students' practices, self-confidence, and satisfaction.

Aim of the study

This study aimed to evaluate the effect of integrating peer education and role-play on pediatric nursing students' practices, self-confidence, and satisfaction through the following objectives:

1. Assess the knowledge of pediatric nursing students regarding peer education and role-play in control and study group.
2. Evaluate the effectiveness of integrating peer education and role-play on pediatric nursing students' practical competence regarding IM injection and gavage feeding in the study group compared to the control group.
3. Assess pediatric nursing students' self-confidence and training method satisfaction in performing IM injection and gavage feeding procedures in the control and study group.

Research Hypotheses

H_1: The knowledge score of pediatric nursing students about peer education and role-play in the study group is higher than the control group.

H_2: Integration of peer education and a role-playing model as practical skills training method in the skills lab positively impacts pediatric nursing students' practical competence, self-confidence, and satisfaction with IM injection and gavage feeding practice.

Subject and Methods

Research design

In this study, a quasi-experimental research design was followed. It is a type of research methodology used to study the effects of independent variables on dependent variables when full experimental control is not possible or ethical. It mimics some aspects of experimental research but lacks randomization. The primary purpose of quasi-experimental design is to investigate cause-and-effect relationships between variables.

Setting

The study's setting was the pediatric nursing skills lab at Helwan University's Faculty of Nursing, Egypt. It is a well-equipped facility designed to provide students with hands-on experience in various pediatric nursing procedures and techniques. It's crucial for their education and future careers. It is on the second floor and contains Manikins, simulators, equipment, and supplies such as sim baby, manikins for gavage feeding, IM injection, neonatal resuscitation, IV sets, suction machines, and other tools commonly used in pediatric nursing.

Subjects

A purposive sample of one hundred students from the second semester of the third year, enrolled in the pediatric nursing course for the 2023–2024 academic year. Simple random sampling was used to assign them to the study and control groups.

Inclusion criteria

Students must meet the following criteria to be allowed to participate in the study; students who enroll in the pediatric nursing course for the first time and are willing to engage in the study.

Exclusion criteria

The study excluded students who had prior experience with pediatric gavage feeding and IM injections and were absent on the evaluation days.

Tools of data collection

Tool I: Structured Questionnaire

It was designed by the researchers in simple English language and consisted of three parts as the following:

Part 1: Pediatric nursing students' characteristics include age, gender, place of residence, previous certificate, and whether they have participated previously in peer education or role-play during clinical training in the lab.

Part 2: Knowledge of pediatric nursing students regarding peer education and role-play. Based on pertinent recent literature (**Şenyuva & Akince, 2020), and (Mamaghani & Ahmadzadeh, 2021),** the researchers prepared it to assess students' knowledge of peer education and role-play, including (definition, benefits, indications, limitations, and consideration of implementation).

Knowledge scoring system

Twenty-five knowledge questions (MCQ and T/F) are included. One point was awarded for each correct response, and zero for each wrong response. Students receive a maximum of 25 points, which are divided into the following categories, with a minimum score of 0:

Poor knowledge < 60% (0-14 grades)

Average knowledge 60% - < 80% (15-19 grades)

Good knowledge ≥ 80% (20 ≤ 25 grades)

Part 3: Pediatric nursing students' opinions on the clinical training method. It was given to the study group to identify their opinions about peer education & role play as a training method for developing practical skills. It includes two questions (peer education & role play are more effective than the traditional method in clinical training, and generalize the application of peer education & role play as a clinical training method in all clinical procedures)

Tool II: Clinical Evaluation Checklist

It was set by researchers using **Datta (2022)** literature as a basis, and it was intended to evaluate pediatric nursing students' skills in performing IM injection and gavage feeding.

Practice scoring system: 26 steps of intramuscular injection and 26 steps of gavage feeding are among the 52 steps in total. The performed step received one grade, but the step that was not done or done incorrectly received zero. 52 grades overall, which were divided into the following categories:

Competent practices ≥ 80 % (42-52 grades)

Incompetent practices < 80 % (0-41 grades)

Tool III: Self-confidence and Satisfaction Scale

It was adopted by **Su & Vicdan (2022)** and **Erol & Zaybak (2020)**. The degree of self-confidence and satisfaction was measured using a visual analog scale. The pediatric nursing students were asked to rate their level of self-confidence in administering intramuscular injections and gavage feeding on a scale. A score of "0" on the scale denoted a lack of confidence, increasing confidence was represented by a rising score, and full confidence was signified by a score of "10". In a similar manner, students were urged to rate how satisfied they were with the practical skills training method utilized for intramuscular injections and gavage feeding. Once more, a "0" score denoted no satisfaction with the method, while higher scores showed rising satisfaction, and a "10" denoted complete satisfaction.

Tool IV: Practical Skills Training Method Preferences Questionnaire

After reviewing relevant literature, researchers created it to evaluate how much pediatric nursing students preferred the method applied in the lab for practical skills training. On a three-point Likert scale, the eight statements were categorized as "agree" (3), "neutral" (2), and "disagree (1)". The overall score included between 8 and 24 points. A low preference level is defined as less than 60% (8 to 14 points), and a preference level ≥ 60% (15 to 24 points) is defined as high.

Preparatory Phase

In this phase, books, journals, and papers on peer education and role-playing were used to review pertinent literature and theoretical understanding of numerous study aspects. As a result, the research tools for gathering data were improved.

Validity

The comprehensiveness, clarity, accuracy, and relevance of the tools' content were assessed by a panel of three pediatric nursing experts, who determined the content validity of each tool.

Reliability

The Cronbach's alpha value (internal consistency) of the student's total knowledge scores regarding peer education and role-play was 0.901, while the students' total practice scores regarding IM injection and gavage feeding were 0.899, and of the pediatric nursing

students' total preference level for practical skills training method was 0.896.

Administrative design

The dean of the Faculty of Nursing at Helwan University, and the head of the pediatric nursing department were the two officials who granted official permission to conduct the study. The researchers were met by the head of the department to explain the purpose of the study and methods of data collection.

Pilot Study

The pilot study was carried out with 10% of the pediatric nursing students studied in the previously mentioned setting to test the clarity and applicability of the study tools as well as to estimate the time needed to fill in the study tools. Some modifications were required in the wording of the questions to be clearer.

Fieldwork

The integration of peer education and role-play model in practical training for pediatric nursing students was done through the following four phases: Assessment, planning, implementation, and evaluation

I. Assessment phase

The assessment phase of the study involved identifying and selecting the appropriate participants. One hundred third-year pediatric nursing students enrolled in a pediatric nursing course represented the study sample. The researchers were accessible in the study setting to collect data three days a week, from 8:30 a.m. to 2:30 p.m. They began by introducing themselves to the students and briefly outlining the purpose and anticipated results of the study. Prior to data collection, informed consent was obtained from all participants. Four tools were developed to assess the students' knowledge, practices, self-confidence, satisfaction, and study group opinions on training methods. Researchers used simple random sampling to allocate participant students into two identical groups. The study group received practical training through peer education and role-play, while the control group received training through a traditional approach involving demonstration and redemonstration.

II. Planning phase

The planning phase focused on designing the intervention and data collection procedures. Every 25 students attended the laboratory area every two weeks from the study and control group. For the study group, a peer education and role-playing model were developed, involving the selection of peer educators based on specific criteria including communication skills and academic performance, then providing them with training. Detailed role-playing scenarios were developed for IM injections and gavage feeding. The theoretical portion of peer education and role-playing has been established through a focused educational session. To facilitate skill acquisition, students were divided into small subgroups for hands-on practice under the guidance of peer educators. In contrast, the control group received the traditional method. Four tools were designed to collect data to measure the outcomes of both groups.

III. Implementation phase

The implementation phase involved the execution of the study design. The study was taken in part from the beginning of March to the end of April 2024, spanning two months.

Intervention for the study group: Initially, four students from the subgroups were chosen to serve as peer educators for the study group. Students who demonstrated strong communication skills, earned good grades in the obstetric nursing course and agreed to act as peer educators. Then the researchers spent twenty to thirty minutes clarifying their roles and providing guidance regarding how to function as peer educators. Prior to receiving skill training, all study group members received about 40 minutes of theoretical instruction in a classroom setting regarding role-playing and peer education. Finally, a synopsis of the material was presented, and queries from the students were addressed.

After the theory session, clinical training started at 9.30 AM and extended to 2.30 PM. To conduct the peer education and role-play method with the procedure of IM injection in the nursing skills lab, with a total of 25 students. The researcher and one of the peer educators used peer education and role-play method to apply the IM injection procedure on the baby manikin in the view of all study group students according to the previously set scenario of role-playing. Afterward, every two peer educator students used role-playing to perform an IM injection at

least once while supervised by the researcher. This process continued until the peer educators' students reported feeling comfortable, and ready. Next, the study group was divided into four subgroups, each consisting of five to six students and a peer educator. In the skills lab, every two students in each subgroup applied practical procedures according to the previously set scenario. Then they rotated their roles in the presence of a peer educator. The researcher observed each subgroup by rotation to ensure the proper application of the procedure. This technique was repeated until every student in every subgroup achieved proficiency in the skill. Additionally, the gavage feeding procedure was applied along with this process.

Regarding the control group: for the application of intramuscular injections and gavage feeding procedures, a traditional training method was used. After the researcher demonstrated how to perform the procedures on the baby manikins for the control group, the students were given an opportunity to practice procedures in the lab while, the researcher supervised them.

IV. Evaluation phase

Analyzing the data collected to determine the intervention's efficacy was the main focus of the evaluation phase. To collect information about students' knowledge, practical competencies, self-confidence, satisfaction, and opinions about training methods four research tools were used 1st, 2nd, 3rd, and 4th tools.

In both groups, following the completion of the procedural training, tool III was used to assess the students' satisfaction level with the method of skill training as well as their level of self-confidence in applying the IM injection and gavage feeding procedures. Additionally, tool IV was utilized to assess the preference of pediatric nursing students for the method used in the lab to train practical skills. Ten days after the IM injection and gavage feeding training was finished, tool II "Clinical Evaluation Checklist" was used to assess the students' practical competencies in performing the IM injection and gavage feeding procedures. After that, they were asked to complete tool I, the "Structured Questionnaire" which included questions about their characteristics, knowledge, and the study group's opinion about peer education & role play as a skills training method.

The influence of peer education and role-playing on student outcomes was ascertained by a comparative analysis of the study and control groups. The results of this phase would inform evidence-based practices in nursing education and contribute to the development of innovative teaching strategies.

Ethical considerations

Before commencing the study, research approval was received by the Scientific Research Ethics Committee at Helwan University's Faculty of Nursing (its session 39, date: 13/2/2024). The researchers obtained informed consent from the students after explaining the aim of the study to them. They guaranteed to keep all information obtained private and to utilize it solely for research. The option of withdrawing from the study at any moment becomes clear to the students.

Statistical analysis

Version 20.0 of SPSS for Windows was used for all statistical analyses (SPSS, Chicago, IL). Normally distributed continuous data were represented as mean ± standard deviation (SD). Numbers and percentages were used to express categorical data. Variables with categorical data were compared using the chi-square test (or, if appropriate, the Fisher's exact test). Calculations were made about the reliability (internal consistency) test of the study's questionnaires. At $p<0.05$, statistical significance was established.

Results

Table (1): Reveals that there was no statistically significant difference in characteristics between the study and control groups, more than half (54% & 68%) of the pediatric nursing students in the study and control group, their ages ranging from 20 to 21 years, with Mean ±SD (21.6 ±1.2 & 21.3 ±1.2) respectively. Also, more than half (62% & 58%) of the study and control group were female. Concerning residence, more than three-fifths (72% & 60%) of the study and control group were from urban respectively. As well as (62% & 60%) of the study and control group had secondary education before college respectively. Furthermore, (74% & 86%) of the study and control group reported never having previously

taken part in peer education or role-playing during their clinical training.

Table (2): represents that more than half (54%) of the study group had good knowledge compared to one-fifth (20%) of the control group about peer education and role-play. The study group exhibited a higher mean score of knowledge (19.7 ± 4.3) compared to the control group (15.3 ± 4.6), the student's t-test confirms a highly statistically significant difference in mean knowledge scores between the two groups ($p < 0.001$).

Table (3): shows that the majority (90% & 82%) of the study group had competent practices compared to more than half (60% %58%) of the control group regarding IM injection and gavage feeding respectively. As well as, in total practice scores, the majority (86%) of students in the study group are more competent than that of the control group (54%) with a highly statistically significant difference ($p < 0.001$).

Table (4): represents that the study group exhibited significantly higher mean scores of self-confidence (9.1 ± 1.0) than the control group (7.7 ± 1.8). Also, the study group reported

Table (6): reveals that most (92% & 90%) of pediatric nursing students in the study group agree that peer education and role-play are more effective than traditional methods in lab clinical training and generalize the application of peer education & role play as a clinical training method in all clinical procedures respectively.

significantly higher mean satisfaction scores (9.4 ± 1.1) regarding the training method than the control group (7.8 ± 2.7), the t-test confirms a highly significant difference ($p < 0.001$).

Table (5): Illustrates that there was a statistically significant difference ($p < 0.001$) in the students' preference levels between the two groups. The majority (82.0%) of the study group students have a high preference level for the clinical training method compared to two-fifths (40.0%) of the control group students. As well as the mean preference score is higher in the study group (36.9 ±3.5) compared to the control group (31.3 ±6.5).

Table 1. Comparison of the general characteristics of the pediatric nursing students in the study and control groups (n=100)

Students' characteristics	Study (n=50)		Control (n=50)		Chi-Square / Fisher's exact test	
	N	%	n	%	X^2	P
Age (Years)						
20 – 21	27	**54.0**	34	**68.0**		
22 – 23	19	38.0	13	26.0		
24 – 25	4	8.0	3	6.0	2.071	0.355
Mean ±SD	21.6 ±1.2		21.3 ±1.2		1.404	0.163
Gender						
Female	31	**62.0**	29	**58.0**		
Male	19	38.0	21	42.0	0.167	0.683
Residence						
Urban	36	**72.0**	30	**60.0**		
Rural	14	28.0	20	40.0	1.604	0.205
Previous certificate						
Secondary school	31	**62.0**	30	**60.0**		
Nursing Institute	19	38.0	20	40.0	0.042	0.838
Have you previously participated in role-playing or peer education in clinical training?						
Yes	13	26.0	7	14.0		
No	37	**74.0**	43	**86.0**	2.250	0.134

Table 2. Distribution of students' total knowledge scores regarding peer education and role-play in the study and control groups (n=100)

Students' total knowledge	Study		Control		Chi-Square	
	n	%	n	%	X^2	P
Poor knowledge	8	**16.0**	23	**46.0**		

Average knowledge	15	30.0	17	34.0		
Good knowledge	27	**54.0**	10	**20.0**	15.194	< 0.001**
Mean ±SD	19.7 ±4.3		15.3 ±4.6		4.905#	< 0.001**

Table 3. Distribution of students' total practice scores regarding IM injection and gavage feeding in the study and control groups (n=100)

Students' practices	Study				Control				Chi-Square	
	Incompetent		Competent		Incompetent		Competent			
	n	%	n	%	n	%	n	%	X^2	P
IM injection	5	10.0	45	**90.0**	20	40.0	30	**60.0**	12.000	< 0.001**
Gavage feeding	9	18.0	41	**82.0**	21	42.0	29	**58.0**	6.857	< 0.009*
Total	7	14.0	43	**86.0**	23	46.0	27	**54.0**	12.190	< 0.001**

Table 4. Mean scores distribution of the students' self-confidence and training method satisfaction regarding IM injection and gavage feeding practices in the study and control groups

Items	Study	Control	Student's t – Test	
	Mean ±SD	Mean ±SD	t	P
Self-confidence	9.1 ±1.0	7.7 ±1.8	4.656	< 0.001**
Training method satisfaction	9.4 ±1.1	7.8 ±2.7	3.892	< 0.001**

Table 5. Distribution of the pediatric nursing students' preference for clinical teaching method in learning clinical skills in the study and control groups (n =100)

Students' Preference Items	Study			Control			Fisher's exact test	
	Disagree	Neutral	Agree	Disagree	Neutral	Agree		
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	X^2	P
Learning clinical skills through methods used in the lab improves my cooperation and interaction with other students.	0 (0.0)	2 (4.0)	48 (96.0)	4 (8.0)	17 (34.0)	29 (58.0)	20.530	<0.001**
The method of clinical training helped me to apply my theoretical knowledge in real scenarios.	0 (0.0)	0 (0.0)	50 (100.0)	3 (6.0)	19 (38.0)	28 (56.0)	28.205	<0.001**
I felt comfortable asking my peers questions & less anxious during the use of clinical training methods in the lab.	0 (0.0)	1 (2.0)	49 (98.0)	8 (16.0)	23 (46.0)	19 (38.0)	41.402	<0.001**
When participating in clinical training methods in the lab, I felt comfortable.	0 (0.0)	1 (2.0)	49 (98.0)	4 (8.0)	7 (14.0)	39 (78.0)	9.636	0.008*
The method used in clinical training improved my problem-solving skills.	1 (2.0)	4 (8.0)	45 (90.0)	7 (14.0)	13 (26.0)	30 (60.0)	12.265	0.002*
The method of clinical training is an effective way to learn pediatric nursing skills.	0 (0.0)	3 (6.0)	47 (94.0)	3 (6.0)	9 (18.0)	38 (76.0)	6.953	0.031*
I would like to participate in the clinical training method used in the future.	1 (2.0)	4 (8.0)	45 (90.0)	4 (8.0)	15 (30.0)	31 (62.0)	10.747	0.005*
The method of clinical training helped me understand clinical procedures.	0 (0.0)	0 (0.0)	50 (100.0)	2 (4.0)	18 (36.0)	30 (60.0)	25.000	<0.001**
Nursing students' preference level	**n (%)**			**n (%)**			**X^2**	**P**
Low	9 (18.0)			30 (60.0)			18.537	<0.001**
High	41 (**82.0**)			20 (**40.0**)				
Mean ±SD	**36.9 ±3.5**			**31.3 ±6.5**			5.339	<0.001**

Table 6. Pediatric nursing students' opinions on the clinical training method (peer education & role play) in the study group (n =50)

Items	Yes n (%)	No n (%)
Peer education & role play are more effective than the traditional method in clinical training	46 (**92.0**)	4 (8.0)
Generalize the application of peer education & role play as clinical training method in all clinical procedures	45 (**90.0**)	5 (10.0)

Discussion

Nursing skills labs are crucial settings that let students develop their skills by doing. Although the skills laboratories are a stressful place for students, the presence of peer educators makes them feel comfortable. Learning is positively impacted by students' increased ability to discuss skills and ask questions of their peer educators. Peer educators have the potential to positively impact their peer learners by helping them recall their educational process while gaining valuable teaching experience. Stated differently, peer education enhances both peer educators and peers **(Korkut & Baser, 2023)**.

Using role-playing as a problem-based learning method helps students become more adept at making decisions, interpreting circumstances, and using critical thinking. Learning through role-playing reduces anxiety and improves student confidence. Also, it improves the learning process' effectiveness and gives it a more realistic grounding **(Khiri & Mohammadi, 2016)**. Furthermore, by providing a clinic-like environment for nursing students, role-playing helps students prepare for professional situations and boosts their self-confidence **(Dorri *et al., 2019)***.

The findings of the current study demonstrate a notable similarity in the characteristics of the study and control groups of pediatric nursing students, more than half of the students in the study and control group, their ages ranging from 20-21 years with a predominance of females in both groups. Concerning residence, more than three-fifths of the study and control group were from urban and had secondary education before college. Also, nearly three-quarters of both groups reported no prior participation in peer education and role-playing, suggesting that these instructional strategies were not widely implemented in their previous clinical training. This lack of prior exposure to peer education and role-playing is particularly significant as it provides a strong baseline for evaluating the effectiveness of the intervention.

From the researchers' point of view, these homogeneities in age, gender, residence, education, and prior experience with peer education and role-playing in both groups suggest that the groups were well-matched, minimizing the potential for confounding variables that could influence the study's outcomes.

Regarding pediatric nursing students' knowledge of peer education and role-playing, more than half of the study group had good knowledge compared to one-fifth of the control group providing strong empirical support for the intervention's effectiveness.

Regarding students' practices, the majority of the study group demonstrated competent practices for IM injection and gavage feeding compared to more than half of the control group. Overall practice scores reinforce the positive effect of the intervention, with a significantly higher proportion of students in the study group achieving competence. So, integrating peer education and role-play as training method in the skills lab can provide students with opportunities to practice and refine their skills in a supportive and collaborative environment. This current study results align with research conducted by

Xu et al. (2023), who found that the role-playing group had superior clinical skills, compared to the traditional teaching group. Also, this result is in line with a study conducted by **Bahar et al. (2022),** which reported that using the peer education model in nursing education positively affects psycho-motor skill acquisition. Furthermore, the study by **Essa et al. (2018),** investigated the effect of the application of peer learning strategy on obstetric and gynecological nursing students' clinical performance and found that the mean percent scores of clinical performances of the intervention group were significantly higher than the control group in the five tested clinical procedures

The study group exhibited significantly higher mean scores of self-confidences and satisfaction with the training method than the control group with a highly statistically significant difference ($p < 0.001$), suggesting that the students were more satisfied with the peer education and role-playing approach that can create a supportive and collaborative environment that fosters students' confidence and motivation. Similarly, a study by **Su & Vicdan, (2022)** showed that the self-confidence and satisfaction level of the students who had the peer mentoring model when performing peripheral intravenous catheterization was higher than the control group. In parallel with our research, the study results of **Ahmady et al. (2021)** demonstrated higher student satisfaction with the role-play method compared to the traditional.

The majority of the study group students have a high preference level for the clinical training method compared to two-fifths of the control group. These results strongly suggest that pediatric nursing students highly prefer the new clinical training method and positively influenced students' cooperation, knowledge application, comfort level, role-taking ability, problem-solving skills, acquiring pediatric nursing skills, willingness to participate in this kind of clinical training method in the future, and understanding of clinical procedure. According to the findings of **Galgam et al. (2022)** study, carried out in Sudan, peer-assisted learning was viewed by the students as a most beneficial and successful approach for pediatric nurses to improve their skills, self-esteem, and effective communication. Also, the present study's result is consistent with the findings of **Essa et al., (2018)**, about students' feedback on using the peer learning strategy, it was found that almost all students preferred the peer learning method to learning nursing skills.

Concerning students' opinions on peer education & role play as clinical training methods in the lab, most students in the study group agree that this method is more effective than traditional approaches. Furthermore, most students indicated their desire to generalize the application of peer education and role-playing to all clinical procedures. This finding may be due to the fact that peer education and role-playing promote active learning, simulate real-world clinical scenarios, and provide students with opportunities to practice their skills in a safe, controlled, and supportive learning environment. In addition to enhancing their self-confidence, cooperation, and teamwork skills. **Korkut & Baser, (2023)** agree with the current study's findings and noted that the students reported that peer education had a positive impact on their cognitive, and psychomotor and recommended using peer education method in nursing education by integrating it with existing teaching methods.

Conclusion

Pediatric nursing students in the study group had good knowledge about role-playing and peer education in comparison to the control group.

Peer education and role-play proved to be more effective than traditional teaching methods for pediatric nursing students to gain competence in intramuscular injection and gavage feeding practices. Additionally, the study group students were more self-confident and satisfied with these training methods.

Recommendations

Based on the study's findings, this study recommends using peer education and role-play in the skills lab to train on all pediatric nursing procedures. Nursing educators should be encouraged to create advanced scenarios for training students and select the best teaching strategy based on their practice setting and learning objectives. Moreover, the research findings can be utilized to develop integrated curricula and education programs that aid in

preparing graduate nurses for careers in healthcare settings.

Implication

Nursing educators may find the results of this study helpful in implementing a range of educational methods as peer education and role-play to improve the teaching and learning process in nursing programs.

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