İKÇÜ SBFD

2026 • CİLT 11 • SAYI 1 • 163-172
DOI: 10.61399/ikcusbfd.1676398

RESEARCH / ARAŞTIRMA

Peer Support in Skills Training of Undergraduate Nursing Students at the International Level: An Evaluation of a Teaching and Learning Method

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ABSTRACT

Objective: This study aimed to evaluate the peer support method in skills training for first-year nursing students, including both local and international students.
Material and Methods: This mixed-methods study included nursing students enrolled in an undergraduate nursing program at a foundation university in Turkey (n=106), who received nursing education in English. The study employed an intervention and control group (Standard Group, n=52; Peer Support Group, n=54) during the Spring Semester of the 2023-2024 academic year. Skills in calculating parenteral drug dose and withdrawing the calculated dose from a pre-diluted ready-to-use vial (Skill 1), and administering an intramuscular injection (Skill 2) were addressed. A focus group interview was conducted with intervention group participants (n=10) to assess their experiences with the method.
Results: The study participants comprised 80.2% females, 67.0% local, and 33.0% international students. Although skill exam scores were higher in the PSG, there was no statistically significant difference between the groups (Overall score, p=0.382; Skill 1, p=0.797; Skill 2, p=0.189). The correct calculation step of Skill 1 had a low score in both groups (p=0.254). The level of satisfaction with this method among the intervention group was 9.07±1.26. Qualitative responses were grouped into the following main categories: "Safety and Comfort," "Teaching and Learning," "Motivation," "Communication," "Knowledge and Experience," and "Process Management."
Conclusion: The scores of Skills 1 and 2 can generally be interpreted as being at a moderate level. Although there was no statistically significant difference, the scores favored the intervention group.
Keywords: Baccalaureate nursing education, clinical skills, nursing education research

Uluslararası Düzeyde Hemşirelik Lisans Öğrencilerinin Beceri Eğitiminde Akran Desteği: Bir Öğretme ve Öğrenme Yönteminin Değerlendirilmesi

ÖZET

Amaç: Bu çalışma, ulusal ve yabancı öğrencilerden oluşan birinci sınıf öğrencilerine yönelik beceri eğitiminde akran destek yöntemini değerlendirmeyi amaçlamıştır.
Gereç ve Yöntem: Bu karma yöntem çalışmasına, İngilizce hemşirelik eğitimi veren Türkiye'deki bir vakıf üniversitesinin hemşirelik lisans programına kayıtlı hemşirelik öğrencileri (n=106) dahil edilmiştir. Çalışma, 2023-2024 akademik yılı Bahar Dönemi'nde girişim ve kontrol gruplu (Standart Grup, n=52; Akran Destek Grubu, n=54) olarak yürütülmüştür. Çalışmada, parenteral ilaç dozu hesaplama ve hesaplanan dozu önceden seyreltilmiş kullanıma hazır bir flakondan çekme (Beceri 1) ve intramüsküler enjeksiyon uygulama (Beceri 2) becerileri ele alınmıştır. Katılımcıların yönteme ilişkin deneyimlerini değerlendirmek üzere girişim grubu katılımcılarıyla (n=10) odak grup görüşmesi yapılmıştır.
Bulgular: Çalışmanın katılımcılarının %80,2'si kadın olup %67,0'ını ulusal ve %33,0'ını uluslararası öğrenciler oluşturmuştur. Genel beceri sınavı ve her iki becerinin puanları girişim grubunda daha yüksek olmasına karşın, gruplar arasında istatistiksel olarak anlamlı bir fark bulunmamıştır (Toplam beceri, p=0,382; Beceri 1, p=0,797; Beceri 2, p=0,189). Beceri 1'in ilaç dozunu doğru hesaplama adımı her iki grupta da düşük puan almıştır (p=0,254). Girişim grubu katılımcılarının yönteme ilişkin memnuniyet düzeyi 9,07±1,26'dır. Nitel yanıtlar "Güvenlik ve Konfor", "Öğretme ve Öğrenme", "Motivasyon", "İletişim", "Bilgi ve Deneyim" ve "Süreç Yönetimi" ana kategorilerinde gruplandırılmıştır.
Sonuç: Beceri 1 ve Beceri 2 puanları genel olarak orta düzeyde olarak yorumlanabilir. İstatistiksel olarak anlamlı bir fark olmamasına karşın puanlar girişim grubu lehine yüksektir.
Anahtar Kelimeler: Hemşirelik lisans eğitimi, klinik beceriler, hemşirelik eğitimi araştırması

1. Introduction

Nursing science plays a pivotal role in delivering person-centered and holistic care (1). The nature of nursing care requires the acquisition of theoretical and psychomotor skills, which also commits to providing safe care. Therefore, nursing education aims to equip nursing students with the knowledge, skills, and attitudes necessary to achieve a certain level of competence upon entering the healthcare workforce (2). Skills training, a significant component of nursing education, enables students to acquire psychomotor skills, integrate theory with practice, develop critical thinking, and prepare for real-life situations (3).

Throughout nursing education, students are taught various psychomotor skills that encompass a range of complexity and difficulty, with the expectation that they will become proficient in them. Over the years, nurse educators have evaluated the effectiveness of various teaching methods in skill training and

Geliş Tarihi/Received: 15.04.2025, Kabul Tarihi/Accepted: 15.10.2025

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This study has not been presented at any congress or scientific meeting.

incorporated these methods into their educational processes. In this context, peer education is one approach that can be employed for skills training in nursing students (4). In a general sense, the term peer refers to individuals who belong to the same social group, sharing similar characteristics such as age, gender, education, and social status. Sharing similar characteristics helps students feel more comfortable and secure. Typically, peer education can be described as a process in which students of the same age and educational experience help one another, learn from each other, and share their achievements to achieve a common goal. The peer education model is evaluated under two main categories: near-peer and co-peer. In the near-peer model, the peer educator is selected from students with higher academic achievement or more experience. An example of this could be third-year students helping first-year students or academically successful students supporting those with lower academic performance on course topics. In the co-peer model, students with similar experience levels collaborate. It is typically formed by students in project-based tasks or during the exam preparation phase. This educational method is conceptualized as peer-learning, peer-assisted learning, peer-supported learning, peer-to-peer learning, peer-mentoring, and peer-tutoring (5, 6, 7).

Studies have shown that peer education has a positive impact on psychomotor skills, cognitive development, critical thinking, and academic achievement by encouraging student participation and fostering a relaxed learning environment (8). A meta-analysis study that included 21 randomized controlled trials revealed that peer-assisted learning significantly improved the academic performance of medical students, that students in the clinical phase were generally more independent, and that the time spent on skills training was reduced. The study suggests that it can be used as an appropriate tool to support independent learning (6). In a quasi-experimental study aiming to determine the effects of peer learning and classical learning methods on ability to interpreting skills of nurses related to arterial blood gas results (control group, n=40; intervention group, n=40), it was found that the pre-test and post-test scores of the peer group for interpretation skills were statistically significant at a higher level compared to the classical learning group. The study suggests that the peer method is one approach that can be utilized in the clinical education of nurses (9).

Since peer education is thought to create an environment where individuals can express themselves more comfortably, recognize their strengths and weaknesses, and actively participate, when properly structured, it can positively impact academic development, professional success, satisfaction, social development, and teamwork skills of the students (10). Considering studies in nursing and other healthcare-related fields (6, 11, 12), it is believed that this method is suitable for teaching nursing skills. Although some positive influences of this method have been reported in the relevant literature (5, 8, 9, 10), it is apparent that studies examining different nursing skills are needed. Furthermore, there is minimal experience with this method among students from various national backgrounds. Accordingly, this study aimed to evaluate the peer support (PS) method in skills training for nursing program students at the international level, encompassing both local and international students. It was intended to assess the students' skills performance and their perceptions of the method within the scope of the evaluation. Thus, it is anticipated that the data obtained from the study will provide insights into the development of peer-supported or peer-guided learning process, which has been drawn attention in recent years as one of the teaching and learning methods.

In the study, the following questions were addressed:

1. What is the effect of the PS method on the skill scores of nursing students?

2. What are the experiences of nursing students towards the PS method in skills training?

3. What are the suggestions of nursing students regarding the improvement of the PS method in skills training?

2. Material and Method

2.1. Study Design

The study was conducted using a mixed design with intervention and control groups.

2.2. Study Setting and Participants

The study was conducted at a foundation university in Istanbul, Turkey, providing undergraduate nursing education entirely in English to local and international students. A purposive sampling method (13) was used to determine the sample. Accordingly, all local and international first-year students enrolled in the Fundamentals of Nursing Practice Course during the Spring Semester of the 2023-2024 academic year constituted the study population (N=125). A sample calculation was performed with a medium effect size (d=0.5), a 95% confidence level (1-α), and 95% test power (1-β) by using Qualtrics Sample Size Calculator (14). The calculation suggested that a total sample size of 95 would be appropriate. Considering potential losses, it was decided that all students enrolled in the Fundamentals of Nursing Practice Course who volunteered to participate would be included in the study. The study was completed with 106 participants, divided into two groups: the Standard Group (SG, n=52) and the Peer Support Group (PSG, n=54). The participants in both groups were selected through simple random sampling from among the volunteer students (15). Inclusion criteria for the sample were as follows: a) Being enrolled in the English nursing undergraduate program, b) Taking the Fundamentals of Nursing Courses, both theoretical and practical, for the first time, and c) Volunteering to participate in the study.

To determine the study participants, the course coordinator provided information about the study during the first class of the semester and answered students' questions. Since participation was voluntary, a preliminary survey was administered via the classroom communication platform to identify volunteers who met the inclusion criteria. The initial survey identified a total of 106 volunteers. The information of these students was transferred from the survey system to Microsoft Excel and listed, with each student numbered consecutively. Using a simple random number table, 106 students were selected from among the volunteers, with 52 assigned to SG and 54 to PSG.

2.3. Study Intervention

The study was integrated into the skills teaching within the Fundamentals of Nursing Practical Course curriculum. This course consists of hospital practice (eight hours per week) and laboratory practice (four hours per week), and is supported by the Fundamentals of Nursing Theoretical Course (three hours per week). The Fundamentals of Nursing Theoretical and Practical Courses are offered in the first year of the nursing undergraduate program. All activities for these courses are conducted by the course coordinator, who holds a doctoral degree and has 15 years of clinical experience.

Within the laboratory practice, topics related to skills training are planned and implemented to align with the theoretical course. Accordingly, after the theoretical course, the weekly laboratory sessions follow a standard sequence of skills training. This sequence includes a summary of the theoretical knowledge, a video demonstration, an explanation of the steps in the skills

checklist, a hands-on demonstration by the instructor, and then having the students perform the skills themselves under the supervision of an instructor. During the practice sessions, students are divided into smaller groups, and each group is assigned a supervisor comprising the course coordinator and research assistants. This process constitutes the standard skills training process. In this study, a PS intervention was provided in addition to the standard training process. This approach involved students who had received standard skills training working with their peers to undertake additional laboratory practice. In this context, SG students received standard skills training, while PSG students received supplementary peer-supported practices in addition to standard training.

2.4. Data Collection Tools

Data were collected using the Descriptive Information Questionnaire, Skill Exam Performance Checklist, and Peer Support Method Experience Evaluation Form. Since both national and international students receive nursing education entirely in English, researchers prepared the data collection tools in English to ensure consistency with in-class instructional activities. The *Descriptive Information Questionnaire* comprised six questions that gathered the sociodemographic characteristics of the participants.

The *Skill Exam Performance Checklist* aimed to evaluate the proficiency of students' skills. This checklist covered the steps for the exam topics related to the practical skills performance exam. The exam topics included the following: a) calculating parenteral drug dose and withdrawing the calculated dose from a pre-diluted ready-to-use vial (Skill 1), and b) administering an intramuscular injection (Skill 2). The *Skill Exam Performance Checklist* was designed to benefit from the skills checklist used to teach relevant skills step by step during laboratory practices throughout the semester. This ensures that assessments are consistent with the content of in-class training activities and prevents confusion among students during the skills exam. To teach internationally recognised knowledge and skills in the laboratory practice course, skill checklists were used, which are available in English and are based on up-to-date sources that provide evidence-based information (2, 16). In this regard, the course coordinator prepared this form, and three researchers independently evaluated the content of the Skill Exam Performance Checklist to ensure a compact and efficient evaluation process. The content agreed upon by consensus was used. Accordingly, six steps were defined for Skill 1, and seven for Skill 2. The score for each step was determined and obtained by evaluating whether the process steps were performed correctly or not. The total score for both skills was assessed out of 100. No cut-off value has been set. The participants were expected to complete each step, thoroughly, and correctly to receive full points. Participants who incompletely perform the steps received half of the points for that step. As a result, the scores for each step were totalled to calculate the scores for both skills. The overall score was calculated by averaging 50% of the total scores from both skills. In addition, evaluators and the research team held a meeting before the skills exam, aiming to eliminate the risk of misjudgment and standardize evaluation criteria. Accordingly, it was decided that participants who completed the steps wholly and correctly would receive full points, those who failed to complete would receive half of the full points, and those who answered incorrectly would receive zero points.

The *Peer Support Method Experience Evaluation Form* was designed as a semi-structured evaluation of the PS method. It focuses on the level of satisfaction with the technique, acquisitions through the technique, its positive and negative aspects, and suggestions for improvement. This form consisted of four open-ended questions and one with a rating scale ranging from 1 to 10. The questions were used in the focus group interview, and qualitative data were obtained through this form. The *Peer Support Method Experience Evaluation Form* was prepared by the researcher, who has received training and publications in qualitative research. Before its use, three researchers independently evaluated the draft content in terms of clarity, comprehensiveness, and appropriateness, and the content agreed upon was used.

2.5. Study Implementation and Data Collection Process

A practical skills performance exam was held at the end of the semester to evaluate the intervention, and focus group interviews were conducted afterward for data collection. Accordingly, the study was carried out in four stages during the Spring Semester of the 2023-2024 academic year (Figure 1).

2.5.1. Preparation Stage

The topics for skills training to be covered throughout the semester, as well as skills checklists and study hours with peer educators, were determined during this stage. The students serving as peer educators were selected and trained in the skills they would teach. The topics (Skills 1 and 2), steps, and evaluation criteria for the skills performance exam were determined. Additionally, the study was announced to the students, and their questions were answered. Volunteer students were then selected for participation in the PSG and SG.

The course coordinator and department head selected the peer students providing PS among the volunteer students in line with the following peer selection criteria of the university: a) Being a nursing student who has completed at least one year of education, b) Being within the normal duration of the English nursing program, c) Having a cumulative Grade Points Average of three or higher, d) Having a recommendation from a faculty member, and d) Having good command in English regarding understanding, speaking, and writing. Five eligible third- and fourth-year students were selected as peers. The peer students provided hands-on support during the laboratory in-class activities. The selected peer students received training from the course coordinator before each skills laboratory training session. The relevant training videos and skills checklists for laboratory training were shared with the peer students, ensuring that they reviewed and studied the topic. Furthermore, these peer student training sessions were delivered online via Zoom before each laboratory practice lesson, and the course coordinator explained how the instruction would be implemented through videos, checklists, and hands-on practices. Additionally, peer students' questions were addressed. Each training session lasted approximately one hour.

2.5.2. Skills Training Stage

The planned educational process was implemented throughout the semester. All students received skills training from the course coordinator as part of the standard skills training program in the Fundamentals of Nursing Practical Course. Accordingly, the SG and PSG participants were divided into sub-groups, and skills training sessions were conducted within these smaller groups. Peer educator students were also present during these sessions and supported the teaching activities. Alongside this standard training process, additional study hours were scheduled to foster more hands-on experience, allowing PSG students to engage in peer-supported training and study subjects in which they felt they needed improvement. All five peers supported the course coordinator in all skills instruction, while two provided additional peer practice sessions. The course coordinator planned these additional study hours with peer students.

The schedule was planned to include two main groups, one in the morning and one in the afternoon, taking into account the availability of peer students who would conduct the additional study sessions and PSG students who would attend these sessions. In each main session, one peer student was assigned to Skill 1, while another peer student was assigned to Skill 2. Training in both skills was undertaken in different areas within the practice laboratory. Three hours were allocated for each main session. During these additional study sessions, PSG students practised preparing medications using powder and liquid vials and withdrawing different doses from vials under the supervision of peer students for Skill 1. For Skill 2, they practised IM administration on mannequins manufactured for IM medication administration training. Students who completed Skill 1 moved on to Skill 2, allowing each student to practise as much as they wanted within the specified time and ask questions to their peers. The course coordinator was also available during these additional study hours to guide in case of any questions that peer students were unable to answer, to avoid the transfer of incorrect or incomplete information. As a result, each PSG student received two hours of training for Skill 1 and two hours for Skill 2. Considering the number of PSG students (n=54), one peer student worked with a total of 26 students throughout the additional practice day.

2.5.3. Skills Assessment Stage

A skills performance exam was administered to the SG (n=52) and PSG (n=54) participants during this stage. This exam was conducted in the skills laboratory, with three separate exam stations in different rooms. Thus, three students were able to take the exam simultaneously. The assessors were assigned to the exam stations, and the course coordinator provided support and supervision during the exam. Two separate waiting areas were created to prevent contact between students entering and leaving the exam, ensuring exam security. Students were escorted from the waiting area to the exam area by their peers, and once the exam was completed, they were directed to a separate waiting area. Additionally, students were asked to store their communication devices and course-related educational materials in the lockers provided for them. As a result, students had no contact with each other and no access to educational materials.

Before taking the skill exam, participants answered questions from the Descriptive Information Questionnaire. After the questions were responded to, the exam was carried out. In the exam, students were asked to perform two procedures: calculating the parenteral drug dose and withdrawing the calculated dose from a pre-diluted, ready-to-use vial (Skill 1), and administering an intramuscular injection (Skill 2).

2.5.4. Focus Group Interview Stage

A qualitative interview was held with the students who volunteered from the PSG participants (n=10). These interviews were scheduled with the participants based on their availability. Three researchers conducted one-to-one interviews with each participant through Microsoft Teams following the skills exam. All interviews were conducted by the same three researchers. During the interviews, one researcher asked questions while another took notes, and the third provided support with recording and technical issues in the online environment. Each interview lasted approximately 30 minutes and was recorded. These recordings were later analyzed to generate qualitative data.

2.6. Statistical Analysis

SPSS Statistics for Windows, Version 28.0 (Armonk, NY, USA: IBM Corp., 2022) was used for data analysis (17). Descriptive statistics were used to evaluate descriptive information of the participants. The Shapiro-Wilk Test was applied to test the normal distribution of the data obtained from each continuous variable. It was determined that the data were normally distributed (W=0.975, p=0.056).

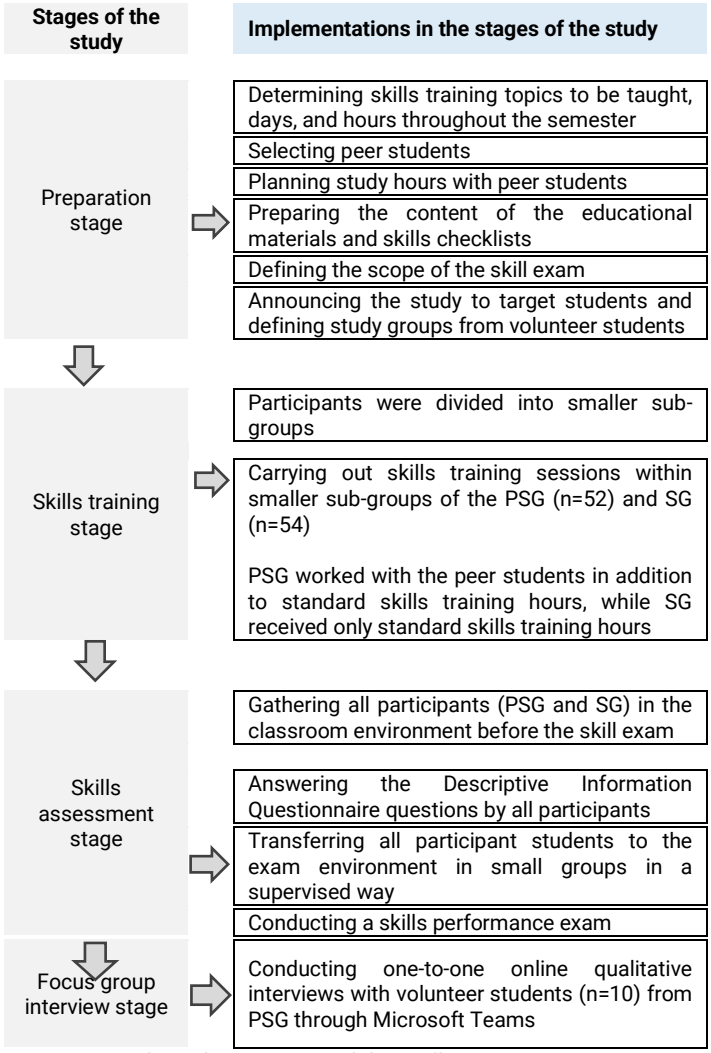

Figure 1. Study implementation and data collection process
(n: Number of students, **PSG:** Peer Support Group, **SG:** Standard Group)

Accordingly, the Student's t-test and ANOVA were used for normally distributed continuous quantitative data (18). Inductive content analysis was employed to analyze the qualitative data obtained from responses to the open-ended questions (19). First, all reactions were decomposed from the records and listed in text format via Microsoft Office Excel. Each response was further organized into meaning units, and condensed meaning units were determined for these meaning units. The focus meaning units, which could be used interchangeably, were coded under more comprehensive concepts. Sub-categories were then created, and these sub-categories were combined to form main categories. The number of responses for the sub-categories forming the main categories was determined. The data obtained in the focus group interviews were examined separately by two different researchers, and the evaluations that were agreed upon were included in the analysis.

2.7. Ethical Aspects of the Research

This study was conducted in accordance with the principles of the Declaration of Helsinki. Istanbul Medipol University Non-

Table 1. Descriptive information of the participants

Descriptive Characteristics		PSG (n=54)		SG (n=52)		Total (n=106)		[a] Test	p
		n	%	n	%	n	%		
Nationality	Local students	32	59.3	39	75.0	71	67.0	2.968	0.085
	International students	22	40.7	13	25.0	35	33.0		
Gender	Female	43	79.6	42	80.8	85	80.2	0.022	0.883
	Male	11	20.4	10	19.2	21	19.8		
Having heard of peer education previously	Yes	39	72.2	35	67.3	74	69.8	0.304	0.582
	No	15	27.8	17	32.7	32	30.2		
Receiving training from peers previously	Yes	26	48.1	18	34.6	44	41.5	1.998	0.157
	No	28	51.9	34	65.4	62	58.5		
Being aware of the peer education activities of the university	Yes	34	63.0	19	36.5	53	50.0	11.030	**0.004**
	No	6	11.1	3	5.8	9	8.5		
	I do not know	14	25.9	30	57.7	44	41.5		
Whether peer education meets expectations (n=54)	Undecided	2	3.7	0	0.0	2	1.9	[a]X²	
	Fully met	46	85.2	0	0.0	46	43.4		
	Did not meet	1	1.9	0	0.0	1	0.9		
	Partially met	5	9.3	0	0.0	5	4.7		
Level of satisfaction with peer support method (n=54)		**Mean±SD**		**Mean±SD**		**Mean±SD**		**Test**	**p**
		9.07±1.26		N/A		9.07±1.26		[b]53.060	**<0.001**
		Min-Max		**Min-Max**		**Min-Max**			
		3-10		N/A		3-10			

n: Number of participants, **%:** Ratio, **PSG:** Peer Support Group, **SG:** Standard Group, **[a]:** Chi-square Test, **[a]X²** could not be calculated since at least one row or column contains all zeros, **[b]:** One Sample T Test, **SD:** Standard deviation, **Min:** Minimum, **Max:** Maximum, **N/A:** Not available

Interventional Clinical Research Ethics Committee approved the study (Decision No: 104, Issue No: E-10840098-202.3.02-736, Date: January 18, 2024). Verbal and written consents were obtained from all participants. Since the study was based on volunteerism, the skills exam records of the students who decided not to participate were not included in the analysis data. The study was administered under the supervision of the department.

3. Results

3.1. Descriptive Information of the Participants

The study participants (n=106) comprised 80.2% females, and 67.0% (n=71) local and 33.0% international (n=35) students. 69.8% of the students stated they had heard of peer education before. 41.5% of the students had previously participated in a peer education program, and 50.0% were aware of the university's peer education activities. No statistically significant differences were found between the SG and PSG participants regarding other descriptive characteristics, except for awareness of peer education activities at the university (p=0.004) (Table 1).

3.2. Skill Scores of the Participants

The mean overall skill exam scores were 67.22±19.57 for the PSG and 63.85 ± 20.06 for the SG, out of 100. The mean total score of calculating parenteral drug dose and withdrawing the calculated dose from a pre-diluted ready-to-use vial (Skill 1) was 62.59±25.12 for the PSG and 61.35±24.50 for the SG. The mean total score for administering intramuscular injection (Skill 2) was 71.85±20.86 for the PSG and 66.35±21.99 for the SG. No statistically significant difference was found between the PSG and SG for the scores (Overall score, p=0.382; Skill 1, p=0.797; Skill 2, p=0.189). The step of correct calculation of the drug dose in Skill 1 received the lowest score among the steps (PSG: 10.00±14.28, SG: 13.27±15.05, p=0.254) (Table 2). Based on descriptive characteristics, no statistically significant differences were found related to skill scores (Table 3).

3.3. Experiences and Suggestions Related to Peer Support Method in Skills Teaching

The extent to which the expectations of PSG participants were met for this training was determined to be 85.2% with the response "completely met," and the level of satisfaction with this educational approach was 9.07±1.26 (Table 1).

The responses obtained through the qualitative interview conducted with the students selected from the PSG (n=10) to evaluate experiences and suggestions regarding the teaching of nursing skills using the PS method were grouped into the main categories of "Safety and Comfort," "Teaching and Learning," "Motivation," "Communication," "Knowledge and Experience," and "Process Management" (Appendix 1).

The prominent sub-categories related to the positive aspects of the PS method were identified as "The method provided a safe and comfortable learning environment (n=6)," "I can ask all the details I do not know or understand more easily (n=5)," and "We can reinforce what we learn in class (n=5)." The acquisitions through the method include "The peers helped me to gain confidence (n=2)," "I learned to express myself comfortably (n=2)," "We benefited from their hospital experiences (n=2)," "My handling skills improved with repeated practice (n=2)," and "I learned by making mistakes (n=2)."

The negative aspects of the method include subcategories such as "They do not have the knowledge and experience of the course instructor (n=2)". Regarding suggestions for improving the process, include "The number and duration of the practice sessions should be increased (n=8)" and "All students could be encouraged to participate in peer education (n=2)" (Appendix 1).

3.3.1. Selected Responses to Qualitative Interview Questions from the Participants

"There may be deficiencies or mistakes in the knowledge. Even if they have experience, they might not have as much experience as a teacher, or could forget. Even if the instructors make a mistake, they can easily and quickly compensate for it thanks to their experience, but we might not find this to be the case with my peers. If that happens, my trust would be shaken." (Participant 1)

"When we do not understand certain parts of the skills, we hesitate to ask the instructor. I repeatedly asked my peers about things I did not understand. Since the formality between the instructors and students is removed, we feel more at ease." (Participant 2)

Table 2. Skill scores of the participants

Exam Topics and Steps	*** Max Score	PSG (n=54)			SG (n=52)			[a]Test	p
		Mean±SD	95% CI (Mean)		Mean±SD	95% CI (Mean)			
			Upper	Lower		Upper	Lower		
*** Skill 1**									
a. Correct calculation of the drug dose	30	10.00±14.28	13.90	6.10	13.27±15.05	17.46	9.08	-1.148	0.254
b. Opening and using the syringe under aseptic conditions	10	7.41±4.42	8.62	6.20	7.50±4.37	8.72	6.28	-0.108	0.914
c. Aseptically opening the vial and wiping it with alcohol	10	7.78±4.20	8.92	6.63	6.92±4.66	8.22	5.63	0.993	0.323
d. Drawing the desired amount of air, equal to the amount of medicine, into the syringe and feeding it into the vial	20	12.96±7.17	14.92	11.01	11.92±7.68	14.06	9.79	0.721	0.473
e. Correctly positioning the vial and hands	10	7.78±4.20	8.92	6.63	7.12±4.58	8.39	5.84	0.777	0.439
f. Correctly withdrawing the required amount of drug from the vial	20	16.67±7.52	18.72	14.61	14.62±8.96	17.11	12.12	1.278	0.204
Total Score 1	**100**	**62.59±25.12**	**69.45**	**55.74**	**61.35±24.50**	**68.17**	**54.53**	**0.259**	**0.797**
**** Skill 2**									
a. Explaining the IM injection sites by demonstrating	15	11.02±5.44	12.50	9.53	10.87±4.82	12.21	9.52	0.153	0.879
b. Correctly identifying the injection sites	25	13.98±9.13	16.47	11.49	13.17±9.45	15.80	10.54	0.448	0.655
c. Correctly preparing the injection site for injection	10	6.11±4.92	7.45	4.77	4.62±5.03	6.02	3.21	1.547	0.125
d. Holding the syringe with the correct technique	5	4.44±1.59	4.88	4.01	4.23±1.82	4.74	3.72	0.645	0.520
e. Correctly inserting the syringe and its needle at the proper angle into the injection site	10	9.82±1.36	10.19	9.44	8.46±3.64	9.48	7.45	2.551	**0.012**
f. Checking if the site is safe before the injection	20	18.15±5.17	19.56	16.74	15.19±7.54	17.29	13.09	2.362	**0.020**
g. Administering the medication at the appropriate injection pace	15	8.33±7.52	10.39	6.28	9.81±7.21	11.81	7.80	-1.030	0.306
Total Score 2	**100**	**71.85±20.86**	**77.55**	**66.16**	**66.35±21.99**	**72.47**	**60.23**	**1.323**	**0.189**
Overall Score	**100**	**67.22±19.57**	**72.56**	**61.88**	**63.85±20.06**	**69.43**	**58.26**	**0.877**	**0.382**

:** Calculating parenteral drug dose and withdrawing the calculated dose from a pre-diluted ready-to-use vial, *:** Administering intramuscular injection, *****:** Maximum scores that can be obtained from the steps, [a]: Student t-test, **n:** Number of participants, **PSG:** Peer Support Group, **SG:** Standard Group, **SD:** Standard deviation, **CI:** Confidence interval

"In my opinion, learning through peers is not only more helpful to students, but it also creates a safe space. It makes me feel more secure than learning from a professor. In the class, we often feel distant from one another, and with many people present, it can be less comfortable in the laboratory. It is a comfort zone for students." (Participant 3)

"I started to do practices more comfortably than before. I learned more easily, and my hands-on skills improved because we experienced it a few times, and they showed us our mistakes." (Participant 4)

"We need a lot of practice and hands-on experience. That is why more practice sessions with peers should be provided." (Participant 5)

4. Discussion

In this study, which employed the PS method for teaching nursing skills to undergraduate nursing students, the focus was on calculating parenteral drug doses and withdrawing the calculated doses from pre-diluted, ready-to-use vials, as well as administering intramuscular injection. According to the evaluation, although no statistically significant difference was found in the overall skill scores between the PSG and SG participants for these two skills, it can be noted that the PSG had a relatively higher score, particularly in administering intramuscular injection (PSG: 71.85 ± 20.86, SG: 66.35 ± 21.99). The skill scores obtained in this study are identical to those obtained in studies conducted with different student groups and study methods.

A study evaluating the impact of peer coaching on the skills levels of nursing students included 130 first-year nursing students, focusing on skills of blood collection and vascular access. In the study, the performance evaluation of both skills was conducted using the checklists developed by the researchers. No statistically significant difference was found between the control and intervention groups in the mean scores obtained for the skills (Blood collection, p=0.520; vascular access, p=0.694) (20). In a pre-test and post-test design study conducted with 92 nursing students, skills related to respiratory procedures (airway management, oxygen mask application, and endotracheal aspiration) were assessed. The experimental group received peer education, and the control group also received education in the traditional model. The performance of these skills was evaluated using the Objective Structured Clinical Examination, and assessment was made before and after the exam. In the study, it was found that the total scores for exam success in both intervention and control groups increased after the training; however, this increase was not statistically significant (p>0.264) (21).

In a study on the skills of gastrointestinal and endocrine examinations of 36 third-year medical students, traditional supervised learning was compared with peer-group learning. In the study, the evaluation scores of students who received traditional teaching were statistically significantly higher (p=0.003) than those of students who received peer learning as the primary teaching method (22). In a study on first-year pharmacy students, skills training was evaluated in areas including arterial blood pressure measurement, blood sugar testing, insulin administration, and drug administration. It was determined that the mean total skill scores of students who participated in the peer support-based training were statistically significantly higher (p=0.04) than those of students who did not participate. However, there was no significant difference between the groups in the skill scores determined for each skill (23). On the other hand, studies have also found that groups receiving peer education showed a statistically significant increase in their skills. In a meta-analysis study that included 44 randomized controlled trials examining the impact of peer education in health professions education, it was reported that in 27 studies, peer education significantly improved procedural

Table 3. Skill scores of the participants by descriptive information

Descriptive Characteristics		n	*Skill 1 Score	**Skill 2 Score	***Overall Score
			Mean±SD	Mea±SD	Mean±SD
Nationality	Local students	71	60.00±25.36	67.75±20.17	63.87±18.98
	International students	35	66.00±23.16	72.00±24.02	69.00±21.20
	[a]Test		-1.178	-0.958	-1.258
	p		0.241	0.340	0.211
Gender	Female	43	60.94±26.03	69.88±21.00	65.41 ±20.18
	Male	11	66.19±18.30	66.19±23.71	66.19±18.59
	[a]Test		-0.871	0.703	-0.161
	p		0.386	0.484	0.873
Having heard of peer education previously	Yes	74	60.68±26.08	69.66±21.81	65.17±20.12
	No	32	65.00±21.25	67.97±21.06	66.48±19.28
	[a]Test		-0.826	0.371	-0.313
	p		0.411	0.712	0.755
Receiving training from peers previously	Yes	44	65.23±25.56	71.25±22.21	68.24±20.86
	No	62	59.68±24.02	67.66±21.03	63.67±18.94
	[a]Test		-1.141	-0.846	-1.174
	p		0.256	0.400	0.243
Being aware of the peer education activities of the university	Yes	53	60.38±25.87	70.57±20.28	65.47±20.61
	No	9	64.44±33.58	72.78±25.14	68.61±24.85
	I do not know	44	63.41±21.56	66.71±22.41	65.06±18.04
	[b]Test		0.227	0.523	0.120
	p		0.798	0.594	0.887

:** Calculating parenteral drug dose and withdrawing the calculated dose from a pre-diluted ready-to-use vial, *:** Administering intramuscular injection, *****:** Total Skill Exam Score, **n:** Number of participants, **SD:** Standard deviation, **[a]:** Student t-test, **[b]:** ANOVA

performance (%95 CI=0.08 - 0.65, p=0.01), while 15 studies found no significant difference in theoretical knowledge scores between peer education and other teaching methods (expert/instructor teaching, self-study, or course (%95 CI=0.09 – 0.29, p=0.32).

These findings suggest that, compared to traditional teaching methods, peer education has a significant impact on the development of procedural skills and may also contribute to the acquisition of theoretical knowledge (24). Although the result is not statistically significant, this study found that the score for the "correct calculation of the drug dose" step was low in PSG and SG. Checking drug orders and administering drugs are among the most important responsibilities of nurses in daily care practice. It is crucial to accurately understand drug orders and administer the correct doses to patients to ensure patient safety. In this context, calculating drug doses is a fundamental competency that every nurse must acquire. In nursing education worldwide, the curricula on drug management typically include instruction on performing dosage calculations. On the other hand, many healthcare professionals involved in the drug management system face difficulties in drug dose calculations (25, 26). In particular, it has been determined that students have limited arithmetic skills at the beginning of their nursing education (25), and various educational approaches have been developed to improve these skills (27, 28, 29). In a systematic review that included 51 studies with different research designs examining teaching strategies to enhance drug dose calculation skills of nurses and nursing students, it was reported that drug calculation errors were related to mathematical skills, such as addition, subtraction, multiplication, and division, as well as conceptual skills involving correctly setting up problems and formulating proportions. According to publications interpreted in line with the principles of rational teaching, it has been suggested that peer guidance or peer supervision, aimed at facilitating interaction with the learning environment and enhancing self-management, can be integrated with other rational teaching methods (30). When interpreting such findings from the relevant literature, it was unsurprising that the drug dose calculation was scored low in this study. Considering that professional nursing skills and the basic mathematical abilities of the students may vary during nursing education (25), developing diverse educational modalities that incorporate critical thinking and dose calculation steps may enhance the educational process for the next generation of future nurses (27-30). In the study, the majority of PSG participants expressed that this educational approach fully met their expectations, and their level of satisfaction with the process was also high. This result suggests that in a nursing undergraduate program, incorporating PS as an educational approach to skills training could be a motivating factor. The emergence of the main category “Motivation” from the responses of the PSG participants is a significant finding, underscoring the importance of this factor. The qualitative responses related to a safe and comfortable learning environment, the ability to ask questions freely, building self-confidence, expressing oneself comfortably, benefiting from experiences, the opportunity for repeated practice, and learning through allowing mistakes, are valuable not only as positive aspects of the method but also in exploring its potential contributions to learning. Regarding the qualifications of peer students involved in the PS method, their limited knowledge and experience compared to the course instructor, as well as the possibility of providing inaccurate or insufficient information, are negative aspects.

It has been observed that the data from many studies, which employ qualitative and quantitative research methods, reflect views similar to those expressed by the students in this study. In a descriptive study to determine opinions on peer education (n=211), most participants were first-year students. Students reported that the positive aspects of the method included reducing anxiety related to clinical and practical applications, facilitating more comfortable discussions and learning, and encouraging individuals, thereby increasing their participation. As a negative aspect, students mentioned the possibility that peers selected as educators might not be practical as teachers (5). In another descriptive study involving first-year and second-year nursing students who used peer learning methods in skills training (n=443), aspects such as feeling more comfortable, reduced stress during skills learning, and increased self-confidence were among the elements that the participants most strongly agreed with. In the same study, the most agreed-upon topics were receiving answers to questions posed to peer educators and the desire for peer education mentorship in all

nursing skills training (31). In a mixed-methods study conducted with first-year and fourth-year nursing students (n=147) regarding peer learning applied in a clinical setting, first-year students reported that they were happy to be in the same clinic with fourth-year students, they were able to adapt better to the clinic while working with them, they could ask them questions which they could not ask their instructors, and they felt comfortable with them (32).

In this study, although there was no statistically significant difference between the total skill scores and skill-related scores of the groups, the results were found to be higher in favour of the PSG group. This result can be interpreted as indicating that students in PSG groups performed relatively better owing to peer-supported education. On the other hand, it is thought that the reason PSG students do not achieve a statistically significant higher score than SG students may be due to peer-supported extra study hours being offered for a specific and limited period. It is evident that a peer-supported, open laboratory-style practice approach, which allows for numerous repetitions, is flexible, continuously accessible, and adaptable to the student, and may contribute to enhancing the process outcomes. However, considering the data obtained in this study and the findings of other studies, it can be seen that in the education of nursing students, especially in their first year, progressing under the guidance of experienced peers in an environment where students feel at ease during a challenging educational process can enhance their self-confidence, ease their adaptation to their nursing education, and support their academic success. Besides, by integrating with other educational methods, it can improve the effectiveness of skills training in an environment where students are motivated and feel secure, allowing them to learn without hesitation.

4.1. Study Limitations

This study provides essential data as it is research that involves local and international students who are studying nursing in a language other than their native language, and uses peer support methods in skills training. Considering the nature of nursing skills training, it is believed that the results of this study may contribute to improving and increasing the effectiveness of PS method, particularly among different groups of students. However, the study has some limitations. One limitation of this study is that it was conducted at a single center. This factor should be considered when interpreting the study's results. The fact that the method's contribution to skills acquisition was evaluated only through certain selected practices may have limited insights into the process's impact. The course schedules of the senior students providing PS may have hindered the possibility of flexible study or scheduling additional study hours. This situation may have limited the efficiency of the method, as it may have reduced the possibility of more repetitive practice sessions with peers. International students were also included in the study. However, due to the number of international students enrolled in the first year of the nursing department, a homogeneous grouping of national and international students could not be achieved. The group sizes could not be evenly distributed due to the voluntary participation and lack of blinding. This situation may have affected the homogeneous distribution of local and international students into the study groups. Since this study is not a tool development study, validity and reliability analyses of the data collection materials, evaluation of skill levels, and the PS method were not employed, which may affect the generalizability of the results. Although the scoring criteria agreed upon with nursing academics before the exam were followed to analyse the performance of students, the assignment of different assessors may have affected the fair and uniform evaluation.

5. Conclusion and Recommendations

This study suggested the contribution of PS in nursing education, particularly in skills training, and various aspects of this method. The skill scores related to calculating parenteral drug doses and withdrawing the calculated dose from a pre-diluted, ready-to-use vial, as well as administering intramuscular injections, may generally be interpreted at a moderate level. Although the scores obtained were not statistically significant, the results were favorable to PSG. The contribution of this method to nursing education can be strengthened, potentially leading to its integration with other teaching approaches or inspiring the development of innovative strategies. Additionally, it is evident that the skills assessed in this study, which are open to development, should be continually refined throughout the entire career of nursing professionals. Therefore, supporting the continuous development of nurses in these areas is also essential to ensure patient safety. Institutional policies, in-service training modalities, and continuous audits may contribute to this process. The PS programs can also be integrated into these processes after graduation. The experiences and expressions of the participating students in the study were primarily positive. The issues reported as negative aspects can be improved through well-structured organizational processes and further research.

6. Contribution to the Field

The study provided data on the contribution and improvement of the PS method used for skills training of nursing students at the beginning of their education. In addition, it has laid the groundwork for further studies and highlighted the need for research evaluating the long-term effects of the method on skills acquisition and retention. In this context, conducting multi-center prospective studies with larger sample sizes and more diverse skills will be beneficial in demonstrating the effectiveness of the method. It is recommended to develop hybrid education models along with the PS programs by integrating various educational modalities, such as simulation-based learning, problem-based learning, traditional classroom education, and clinical practice, and to support these efforts with studies evaluating the impact of these methods on academic success in nursing education. Conducting qualitative studies with multinational participants, including students from diverse linguistic and educational backgrounds in nursing programs, may significantly contribute to evaluating the method across heterogeneous groups. Furthermore, the study suggests the need to establish student-centred, flexible, and sustainable peer-supported educational models and to structure objective evaluation processes, such as using process-specific assessment tools and inter-assessor reliability.

Acknowledgements

The authors sincerely thank all participating nursing students, skills laboratory staff, peer students, and department head for their unconditional support.

Conflict of Interest

There is no conflict of interest with any person and/or institution.

Authorship Contribution

Concept: VÇ, BÖ; Design: VÇ, BÖ, BE, NG; Supervision: VÇ; Materials: VÇ, BÖ; Data Collection/Processing: VÇ, BÖ, BE, NG; Analysis/Interpretation: VÇ; Literature Review: VÇ, BE, NG; Manuscript Writing: VÇ, BÖ, BE, NG; Critical Review: VÇ

Funding

No budget support was received for the research.

References

1. Byrne AL, Baldwin A, Harvey C. Whose centre is it anyway? Defining person-centred care in nursing: An integrative review. PLoS One. 2020;15(3):e0229923. DOI:10.1371/journal.pone.0229923.
2. Potter PA, Perry AG, Stockert PA, Hall A. Fundamentals of nursing. 10th ed. St. Louis: Elsevier; 2020. p. 2177-200.
3. Whitmore C, Baxter PE, Kaasalainen S, Ploeg J. The similarities and differences in transition to practice experiences for new-graduates and practical nurses in long-term care. J Nurs Adm. 2019;49(12):586-90. DOI:10.1097/NNA.0000000000000820.
4. Aldridge MD. Nursing students' perceptions of learning psychomotor skills: A literature review. Teach Learn Nurs. 2017;12(1):21-7. DOI:10.1016/j.teln.2016.09.002.
5. Şancı Y, Kelleci Ö. Hemşirelik bölümü öğrencilerinin akran eğitimi hakkındaki görüşleri: bir vakıf üniversitesi örneği. SBÜHD. 2019;1(2):104-11.
6. Brierley C, Ellis L, Reid ER. Peer-assisted learning in medical education: A systematic review and meta-analysis. Med Educ. 2022;56(4):365-73. DOI: 10.1111/medu.14672.
7. Markowski M, Bower H, Essex R, Yearley C. Peer learning and collaborative placement models in health care: A systematic review and qualitative synthesis of the literature. J Clin Nurs. 2021;30(11-12):1519-41. DOI:10.1111/jocn.15661.
8. Osborne K, Othman M. Peer assisted learning model to support students' success in a complex science course. J Nurs Educ Pract. 2019;9(11):53-62. DOI:10.5430/jnep.v9n11p53.
9. Mauliandari R, Sumarwati M, Upoyo AS. Peer learning: An effective teaching-learning method for improving ability in arterial blood gases interpretation. Nurse Media J Nurs. 2020;10(3):329-38. DOI: 10.14710/nmjn.v10i3.28660.
10. Tullis JG, Goldstone RL. Why does peer instruction benefit student learning? Cogn Res Princ Implic. 2020;5(1):15. DOI:10.1186/s41235-020-00218-5.
11. Pålsson Y, Mårtensson G, Swenne CL, Mogensen E, Engström M. First-year nursing students' collaboration using peer learning during clinical practice education: An observational study. Nurse Educ Pract. 2021;50:102946. DOI:10.1016/j.nepr.2020.102946.
12. Yang L, Wang Y. Application of a peer learning and assessment model in an undergraduate pharmacy course. BMC Med Educ. 2023;23(1):362. DOI:10.1186/s12909-023-04352-8.
13. Palinkas LA, Horwitz SM, Green CA, Wisdom JP, Duan N, Hoagwood K. Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. Adm Policy Ment Health. 2015;42(5):533-44. DOI:10.1007/s10488-013-0528-y.
14. Qualtrics. Sample Size Calculator [Internet, Updated December 8, 2023]. Available from: https://www.qualtrics.com/blog/calculating-sample-size/ (Accessed December 12, 2024).
15. Noor S, Tajik O, Golzar J. Simple random sampling. Int J Educ Lang Stud. 2022;1(2):78-81. DOI:10.22034/ijels.2022.162982.
16. Taylor C, Lynn P, Barlett JL. Fundamentals of nursing: the art and science of person-centered nursing care. 9th ed. Philadelphia: Wolters Kluwer; 2019. p. 835-70.
17. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY: IBM Corp; 2022.
18. Pallant J. SPSS survival manual: A step by step guide to data analysis using IBM SPSS. 7th ed. London: McGraw-Hill Education; 2020. p. 94-110.
19. Vears DF, Gillam L. Inductive content analysis: A guide for beginning qualitative researchers. Focus Health Prof Educ. 2022;23(1):111-27. DOI:10.11157/fohpe.v23i1.544.
20. Pehlivan Coştu E, Bilgiç Ş. The effectiveness of peer coaching in the skill development of nursing students: the experimental study. Turkiye Klin J Nurs Sci. 2023;15(3):689-97. DOI:10.5336/nurses.2023-95277.
21. Bahar A, Kocaçal E, Maraş GB. Impact of the peer education model on nursing students' anxiety and psychomotor skill performance: A quasi experimental study. Niger J Clin Pract. 2022;25:677-82. DOI:10.4103/njcp.njcp_1905_21.
22. Alzaabi S, Nasaif M, Khamis AH, Otaki F, Zary N, Mascarenhas S. Medical students' perception and perceived value of peer learning in undergraduate clinical skill development and assessment: mixed methods study. JMIR Med Educ. 2021;7(3):e25875. DOI:10.2196/25875.
23. Cole JD, Ruble MJ, Donnelly J, Groves B. Peer-assisted learning: clinical skills training for pharmacy students. Am J Pharm Educ. 2018;82(6):6511. DOI:10.5688/ajpe6511.
24. Zhang H, Liao AWX, Goh SH, Wu XV, Yoong SQ. Effectiveness of peer teaching in health professions education: A systematic review and meta-analysis. Nurse Educ Today. 2022;118:105499. DOI:10.1016/j.nedt.2022.105499.
25. Simonsen BO, Daehlin GK, Johansson I, Farup PG. Improvement of drug dose calculations by classroom teaching or e-learning: A randomised controlled trial in nurses. BMJ Open. 2014;4(10):e006025. DOI:10.1136/bmjopen-2014-006025.
26. Stake-Nilsson K, Almstedt M, Fransson G, Masoumi D, Elm A, Toratti-Lindgren M, Björkman A. Medication dosage calculation among nursing students: does digital technology make a difference? A literature review. BMC Nurs. 2022;21(1):123. DOI:10.1186/s12912-022-00904-3.
27. Bıyık Bayram Ş. The effect of padlet on nursing students' drug dose calculation skills. Mediterr Nurs Midwifery. 2024;4(2):112-9. DOI:10.4274/MNM.2023.23168.
28. Karabag-Aydin A, Dinc L. Effects of web-based instruction on nursing students' arithmetical and drug dosage calculation skills. Comput Inform Nurs. 2017;35(5):262-9. DOI:10.1097/CIN.0000000000000317.
29. Pol-Castañeda S, Carrero-Planells A, Moreno-Mulet C. Use of simulation to improve nursing students' medication administration competence: A mixed-method study. BMC Nurs. 2022;21(1):117. DOI:10.1186/s12912-022-00897-z.
30. Dutra SVO, Kumar K, Clochesy JM. Instruction strategies for drug calculation skills: A systematic review of the literature. Nurse Educ Today. 2022;111:105299. DOI:10.1016/j.nedt.2022.105299.
31. Korkut S, Başer M. Students' opinions on the peer education approach in nursing skill training. J High Educ Sci. 2020;10(3):414-22. DOI:10.5961/jhes.2020.401.
32. Eraydın Ş, Güven S. Peer assisted learning in clinical nursing education: A mixed method study. J Educ Res Nurs. 2024;21(4):1-11. DOI:10.14744/jern.2024.77992.

Appendix 1. Experiences and suggestions related to peer support method in skills teaching

Interview Domains	Main Categories and Sub-categories					
	1. Safety and Comfort	**2. Teaching and Learning**	**3. Motivation**	**4. Communication**	**5. Knowledge and Experience**	**6. Process Management**
Positive aspects of the method	- The method provided a safe and comfortable learning environment (n=6) - I can ask all the details I do not know or understand more easily (n=5) - In large student groups, training progress is made quickly (n=2) - It allows us to make mistakes (n=2)	- We can reinforce what we have learned in class (n=5) - Seeing from our peers makes learning easier (n=3) - We can benefit from the experiences of senior students (n=2) - It makes us feel like we are practicing together with a colleague (n=2) - The person teaching teaches more themselves (n=1)				
Acquisitions through the method	- The peers helped me to gain confidence (n=2) - I learned to express myself comfortably (n=2)	- We benefited from their hospital experiences (n=2) - My handling skills improved with repeated practice (n=2) - I learned by making mistakes (n=2)	- It was motivating to benefit from experiences (n=1)	- I learned to share information with my peers (n=1) - My communication with friends improved (n=1)		
Negative aspects of the method		- They may provide inaccurate or insufficient information (n=1) - They may explain the information differently from the course instructor (n=1)			-They do not have the knowledge and experience of the course instructor (n=2)	-There are not enough peer educators (n=1)
Suggestions for improving the method			- All students could be encouraged to participate in peer education (n=2) - Students can meet socially with peers outside of class (n=1)			- The number and duration of the practice sessions should be increased (n=8) - Peer education sessions can be organized immediately after theoretical classes (n=1) - The number of peers could be increased (n=1)