

Araştırma Makalesi/ Research Article

The Effect of Near-Peer Teaching on Nursing Students' Physical Examination Practices and Stress Levels

Hemşirelik Öğrencilerinde Yakın Akran Öğretiminin Fiziksel Muayene Uygulamaları ve Stres Düzeylerine Etkisi

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ABSTRACT

Objective: The objective of this research was to examine the effect of near-peer teaching on nursing students' physical examination practices and perceived stress.

Methods: This single group pretest-posttest study was conducted with 91 students (second-year nursing undergraduate students). Data were collected using the Student Information Form, Physical Examination Practices Form, and the Perceived Stress Scale for Nursing Students.

Results: A significant improvement was observed in all physical examination practices among nursing students, except for height and weight measurements ($p<0.05$). The total perceived stress score of students before the implementation was 67.0 (SD 21.6), and the total perceived stress score after the implementation was 57.6 (SD 21.42), with the difference being statistically significant ($p<0.05$). Significant reductions were observed in all subscales of the Perceived Stress Scale for Nursing Students, except for stress from peers and daily life ($p<0.05$).

Conclusion: This research determined that physical examination education provided through the near-peer teaching method had a positive impact on students' physical examination practices and perceived stress levels. In this context, implementing near-peer teaching programs for nursing students to practice physical examinations in clinical settings is recommended.

Keywords: Physical examination, nursing students, peer learning, stress

ÖZ

Amaç: Bu araştırmanın amacı, yakın akran öğretiminin hemşirelik öğrencilerinin fiziksel muayene uygulamaları ve algılanan stresleri üzerindeki etkisini incelemektir.

Yöntem: Tek gruplu ön test-son test çalışması 91 öğrenci (hemşirelik ikinci sınıf öğrencileri) ile yürütüldü. Veriler Öğrenci Bilgi Formu, Fiziksel Muayene Uygulama Formu ve Hemşirelik Öğrencileri İçin Algılanan Stres Ölçeği kullanılarak toplandı.

Bulgular: Hemşirelik öğrencilerinde boy ve kilo ölçümü dışında tüm fiziksel muayene uygulamalarında anlamlı gelişme gözlemlendi ($p<0.05$). Öğrencilerin uygulama öncesinde algıladıkları toplam stres puanı 67.0 (SS 21.6), uygulama sonrasında algıladıkları toplam stres puanı ise 57.6 (SS 21.42) olup aradaki fark istatistiksel olarak anlamlı bulunmuştur ($p<0.05$). Hemşirelik Öğrencileri İçin Algılanan Stres Ölçeğinin akran stresi ve günlük yaşam stresi dışındaki tüm alt boyutlarında anlamlı azalmalar gözlemlendi ($p<0.05$).

Sonuç: Bu çalışmada yakın akran öğretimi yöntemiyle verilen fiziksel muayene eğitiminin öğrencilerin fizik muayene uygulamaları ve algılanan stres düzeyleri üzerinde olumlu etkisi olduğu tespit edilmiştir. Bu bağlamda hemşirelik öğrencilerinin klinik ortamlarda fiziksel muayene uygulamaları yapmalarına yönelik yakın akran öğretimi programlarının uygulanması önerilmektedir.

Anahtar Kelimeler: Akran öğrenmesi, hemşirelik öğrencileri, fiziksel muayene, stres

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Introduction

Nursing education aims to equip students with the knowledge, practices, and attitudes necessary to enter the workforce (Ladyshewsky, 2002). Today, advancements in science, technology, and healthcare affect the nursing profession, which comprises a significant portion of the healthcare sector (Kunter and Gezer, 2020). Traditional nursing education has taken on a new dimension as demands for updating the job descriptions of nursing and increasing competence and expectations for nurses have been considered with legislation. Utilizing physical examination skills while providing care is regarded as an indicator of the evolving and expanding role of nursing (Kavradım and Özer, 2018). Physical examination involves systematically compiling data obtained directly or through methods such as inspection, palpation, percussion, and auscultation, and it is considered a valuable asset between nurses and patients in directing care (Lynn, 2018). Utilizing physical examination practices correctly, accurately, and promptly is not only a fundamental requirement for maintaining patient safety in healthcare settings but also grants nurses autonomy in practice (Eyüboğlu and Çalışkan, 2019).

In clinical practice, physical examination education is a vital component of nursing education and holds significant value for both educators and students (Doğdu et al., 2021). However, it is noteworthy that while the number of nursing undergraduate students in Türkiye has increased approximately 6.2 times in the past two years, the number of nursing faculty members has only increased 1.5 times, resulting in a faculty-to-student ratio of 1/79 for the same academic year (CoHE, 2017). The faculty-to-student ratio in nursing education in Türkiye falls below international standards, prompting nursing educators to employ various teaching strategies when delivering both theoretical and clinical curricula (Aslan and Subaşı, 2022; Çulha and Afşin, 2023; Kocaman and Yürümezoğlu, 2015; Ulupınar and Eycan, 2023). Peer education, one of these strategies, involves a group of students actively participating in the learning process and serving as educators for other students (Henderson et al., 2011).

The peer education model is implemented in two different ways: either among individuals of the same age group or between two groups with an age difference (near-peer teaching). Near-peer teaching is defined as when the teaching student is at least one academic year ahead of the student in the learner

role (Bulte et al., 2007; Pintér et al., 2021). Near-peer teaching (NPT) has gained popularity as an effective teaching method in medical faculties, particularly in anatomy, basic sciences, and physical examination training (Musbahi et al., 2019; Rashid et al., 2019; Rosenberg et al., 2017; Schiff et al., 2014; Shenoy and Petersen, 2020). Studies show that peer teaching reduces stress levels and positively impacts skill acquisition (Kharasch et al., 2021; Knobloch, Ledford, Wilkes, and Saperstein, 2018). Due to the complexity of clinical and theoretical experiences in nursing education, nursing students feel more stress and anxiety compared to other programs (Chernomas and Shapiro, 2013; Raymond and Sheppard, 2017). In the nursing education process, it is crucial to maintain students' psychological well-being and help them cope with stress by providing a healthy learning environment. Therefore, this study aimed to investigate the effect of near-peer teaching on nursing students' physical examination practices and stress levels.

Hypotheses of the study

Using the NPT method for physical examination training of nursing students will:

H₁: Enhance physical examination practices of students.

H₂: Reduce the stress perceived by students in clinical settings.

Methods

Design

The research employed a quasi-experimental design with a single-group pretest-posttest research design to investigate the impact of physical examination training provided through NPT on nursing students' physical examination practices and perceived stress. The study was conducted as part of the clinical practice in the Internal Medicine Nursing course between October 19, 2022, and December 23, 2022, at the Internal Medicine Units of Ordu State Hospital during the fall semesters of 2022 and 2023.

Sample and Setting

The participants in the study consisted of 115 second-year students from the Department of Nursing at Ordu University Faculty of Health Sciences, who were taking the Internal Medicine Nursing course for the first time. Nursing education in Türkiye is offered at the undergraduate level for four years (8 semesters). The Health Assessment course at the faculty, which is a part of the curriculum for the first year (2nd semester), consists

of only 3 hours of theoretical instruction and does not include any practical applications. In the practice of the Internal Medicine Nursing course, students often have the opportunity to practice physical examinations (2nd year, 3rd semester). In the faculty where the study was conducted, the Internal Medicine Nursing course consists of 6 hours of theory and 8 hours of practice. The theoretical classes are conducted face-to-face in the school's classrooms by two instructors. Clinical practices are carried out under the guidance of a faculty member, with students divided into two groups and conducting their practice in the internal medicine units of a state hospital in the city center. The student-to-instructor ratio is 55 students per instructor.

To participate in the study, eligibility criteria were set, including being a second-year student in the Department of Nursing at Ordu University Faculty of Health Sciences, taking the Internal Medicine Nursing course for the first time, successfully completing the Health Assessment course in the first year (2nd semester), and volunteering to participate in the study. Ten students who failed the Health Assessment course and were retaking it were not included in the study. Additionally, five students who did not wish to participate in the study and nine students with incomplete data in the posttest were not included in the sample. Therefore, the study's sample consisted of 91 students.

Data Collection

Peer Selection and Training

Peer educators were selected from among third-year nursing students who had taken the Health Assessment course, demonstrated successful physical examination performance at patient bedsides during the Internal Medicine Nursing clinical practice, achieved high scores, and volunteered for the role. To prepare peer educators, these students underwent five weeks of training, two hours per week, to become competent peer educators. This training was conducted by the advisor of this study and aimed to enhance the peer educators' knowledge of the subject. Within the scope of physical examination training, students were extensively taught about cardiovascular, pulmonary, abdominal, and neurological examination topics. Furthermore, the planning of the training incorporated recommendations from the literature regarding the use of the peer education model in nursing (Ünver and Akbayrak, 2013;

Waddell and Dunn, 2005), and the "Peer Education Model" was applied in this context.

Pretest

Before commencing near-peer education, students were administered a Student Information Form, Physical Examination Practices Form, and the Perceived Stress Scale for Nursing Students (PSSNS) face-to-face.

Near-Peer Teaching

Prior to teaching, peer learners were divided into groups of six, with each group assigned a near-peer educator. As live patient-based physical examination training is more effective in a clinical setting (Tuzer et al., 2016), near-peer education was conducted at the patient's bedside in the Internal Medicine Units. The education, lasting approximately 40 minutes, was delivered by the near-peer educators, with the advisor-researcher present as an observer and not intervening during the training. After the near-peer teaching, students in pairs performed physical examinations on their patients.

Posttest

Four weeks after the implementation, students were administered a Physical Examination Practices Form and the Perceived Stress Scale for Nursing Students (PSSNS) face-to-face.

Data Collection Tools

Student Information Form

The questionnaire, which was developed by the researchers after reviewing the literature (Doğdu et al., 2021; Şahan and Gezer, 2021), consists of a total of 8 questions. These questions question the socio-demographic information (age, gender, etc.) of students and factors that could influence their physical examination practices and clinical stress (academic achievement, current employment as a nurse, etc.).

Physical Examination Practices Form

The Physical Examination Practices Form was developed in accordance with the literature (Doğdu et al., 2021; Enç N., 2021), and expert opinions were obtained from three faculty members specialized in Internal Medicine Nursing. In line with the feedback, the form was revised, and the final version was produced. The form covers physical examination practices related to cardiovascular, pulmonary, abdominal, and neurological examinations, encompassing a total of 28 items. Respondents provided answers for each physical examination skill using the following response options: "I don't know how to do it," "I know but

haven't practiced," "I know and have practiced 1-2 times," and "I know and have practiced 4-5 times."

Perceived Stress Scale for Nursing Students (PSSNS)

The scale, originally developed by Sheu et al. (2002), was adapted into Turkish by Karaca, A., et al. (2015). This scale consists of 6 subscales based on different sources of stress, comprising a total of 29 items. These subscales are as follows:

1. Stress from taking care of patients
2. Stress from assignments and workload
3. Stress from lack of professional knowledge and practices
4. Stress from the environment
5. Stress from peers and daily life
6. Stress from teachers and nursing staff

The items are rated using a five-point Likert scale ranging from "4 - Very stressful for me" to "0 - Not at all stressful for me." The total score on the scale can range from 0 to 116. As the total score increases, the level of stress perceived by the participants also increases. The Cronbach's alpha coefficient for the scale ranges from 0.67 to 0.93, and the test-retest reliability was found to be 0.96 (Karaca et al., 2015). In this study, the Cronbach's alpha value for the scale was found to be 0.93, and the Cronbach's alpha values for the subscales ranged from 0.63 to 0.82. This test was measured at the end of the intervention after the students performed a physical examination on their own

Analysis

The data analysis for this study was conducted using IBM SPSS version 24.0. Among the statistical methods used for evaluating and interpreting the results, the following were employed: descriptive statistics, normality analysis, chi-square test, and paired-samples T-test. In the research, the chi-square test was used for the analysis of different measurements related to students' physical examination practices, and the paired-samples T-test was employed to compare the scores for perceived stress levels across different measurements.

Ethical Considerations

Prior to the study, written permission was obtained from the Ordu University Clinical Research Ethics Committee (Reference no: 2022/224). Additionally, informed written consent was meticulously obtained from all participating students. Participants were thoroughly informed about the study's objectives, data privacy measures,

voluntary participation, and their right to withdraw from the study at any time. Furthermore, verbal consent was obtained from patients undergoing examination in the clinical setting. Official permissions were obtained from the institution prior to clinical practice.

Results

The mean age of nursing students was 19.8 ± 0.74 years. Of the students, 76.9% were female, 72.5% graduated from Anatolian High Schools, 59.3% chose the nursing profession willingly, and their average academic achievement score was 2.78 ± 0.26 (Table 1).

Table 1. Socio-demographic characteristics of students (n=91)

Socio-demographic characteristics		Min-Max	X $\pm$ SD
Age (Years)		18-22	19.83 $\pm$ 0.74
Achievement Score (GPA)		2.26-3.58	2.78 $\pm$ 0.26
Gender		n	%
	Female	70	76.9
Type of high school	Male	21	23.1
	Health	4	4.4
	Vocational High School		
	Anatolian High School	66	72.5
	Science High School	15	16.5
	Other	6	6.6
Willingness when choosing nursing	I chose it willingly	54	59.3
	I chose it at my family's request	21	23.1
	I chose it randomly	16	18.6

Min = minimum; Max = maximum; X= Mean; SD=Standard Deviation

Following the intervention, a significant improvement was observed in all physical examination practices except for height and weight measurements among nursing students ($p < 0.05$) (Table 2).

Table 2. Students' physical examination practices: Pretest and posttest results (n=91)

Students' Physical Examination Practices			I don't know how to do it	I know but haven't practiced	I know and have practiced 1-2 times	I know and have practiced 4-5 times	X^2*	p
			n(%)	n(%)	n(%)	n(%)		
1. Inspection of the cranial region and palpation of the frontal and maxillary sinuses.	Pretest		39(42.9)	48(52.7)	4(4.4)	0(0.0)	103,681	0.000**
	Posttest		5(5.5)	15(16.5)	53(58.2)	18(19.8)		
2. Assessment of the mouth and teeth.	Pretest		13(14.3)	65(71.4)	11(12.1)	2(2.2)	100,584	0.000**
	Posttest		0(0.0)	11(12.1)	52(57.1)	28(30.8)		
3. Examination of the conjunctiva and checking for jaundice in the face.	Pretest		14(15.4)	45(49.5)	28(30.8)	4(4.4)	61,581	0.000**
	Posttest		0(0.00)	10(11.0)	54(59.3)	27(29.7)		
4. Checking for edema in the tibia	Pretest		11(12.1)	50(54.9)	27(29.7)	3(3.3)	68,537	0.000**
	Posttest		2(2.2)	8(8.8)	46(50.5)	35(38.5)		
5. Assessment of skin turgor.	Pretest		7(7.7)	35(38.5)	31(34.1)	18(19.8)	33,675	0.000**
	Posttest		0(0.00)	8(8.8)	45(49.5)	38(41.8)		
6. Inspection for cyanosis in fingertips, lips, and nails.	Pretest		4(4.4)	39(42.9)	39(42.9)	9(9.9)	37,601	0.000**
	Posttest		0(0.00)	9(9.9)	49(53.8)	33(36.3)		
7. Evaluation of petechiae and ecchymosis.	Pretest		45(49.5)	37(40.7)	9(9.9)	0(0.0)	64,439	0.000**
	Posttest		10(11.0)	22(24.2)	42(46.2)	17(18.7)		
8. Examination for hematomas.	Pretest		39(42.9)	45(49.5)	78(7.7)	0(0.00)	46,137	0.000**
	Posttest		13(14.3)	31(34.1)	36(39.6)	11(12.1)		
9. Assessment of sensitivity, color changes, and integrity of upper and lower extremities.	Pretest		18(19.8)	57(62.6)	11(12.1)	5(5.5)	57,685	0.000**
	Posttest		5(5.5)	19(20.9)	46(50.5)	21(23.1)		
10. Evaluation of the size, shape, and color variations of joints and muscles.	Pretest		23(25.3)	52(57.1)	14(15.4)	2(2.2)	52,706	0.000**
	Posttest		5(5.5)	23(25.3)	41(45.1)	22(24.2)		
11. Assessment of joint mobility in all directions.	Pretest		19(20.9)	58(63.7)	13(14.3)	1(1.1)	55,193	0.000**
	Posttest		5(5.5)	24(26.4)	40(44.0)	22(24.2)		
12. Examination of lymph nodes.	Pretest		37(40.7)	49(53.8)	5(5.5)	0(0.0)	50,887	0.000**
	Posttest		12(13.2)	32(35.2)	34(37.4)	13(14.3)		
13. Examination of the patient's chest, neck, and peripheral veins.	Pretest		31(34.1)	48(52.7)	11(12.1)	1(1.1)	53,228	0.000**
	Posttest		7(7.7)	26(28.6)	41(45.1)	17(18.7)		
14. Measurement of height and weight.	Pretest		3(3.3)	37(40.7)	31(34.1)	20(22)	3,884	0.369
	Posttest		0(0.0)	39(42.9)	27(29.7)	25(27.5)		
15. Evaluation of the chest region for deformities.	Pretest		48(52.7)	38(41.8)	5(5.5)	0(0.0)	63,065	0.000**
	Posttest		8(8.8)	36(39.6)	36(39.6)	11(12.1)		
16. Palpation of the apical impulse.	Pretest		32(35.2)	42(46.2)	16(17.6)	1(1.1)	35,271	0.000**
	Posttest		11(12.1)	26(28.6)	41(45.1)	13(14.3)		
17. Auscultation of the apical impulse.	Pretest		31(34.1)	39(42.9)	18(19.8)	3(3.3)	25,021	0.000**
	Posttest		13(14.3)	25(27.5)	40(44.0)	13(14.3)		

Table 2. (continue) Students' physical examination practices: Pretest and posttest results (n=91)

		I don't know how to do it	I know but haven't practiced	I know and have practiced 1-2 times	I know and have practiced 4-5 times	χ^2*	p
		n(%)	n(%)	n(%)	n(%)		
18. Auscultation of heart sounds (S1, S2, S3, S4, aortic, pulmonary, tricuspid, mitral areas).	Pretest	26(28.6)	42(46.2)	19(20.9)	4(4.4)	21,044	0.000**
	Posttest	7(7.7)	35(38.5)	39(42.9)	10(11.0)		
19. Examination for lower extremity thrombophlebitis.	Pretest	56(61.5)	32(35.2)	3(3.3)	0(0.0)	35,191	0.000**
	Posttest	26(28.6)	33(36.3)	27(29.7)	5(5.5)		
20. Listening to bowel sounds.	Pretest	19(20.9)	50(54.9)	21(23.1)	1(1.1)	51,547	0.000**
	Posttest	3(3.3)	20(22.0)	51(56.0)	17(18.7)		
21. Testing for ascites and measuring abdominal circumference.	Pretest	23(25.3)	61(67.0)	7(7.7)	0(0.0)	63,700	0.000**
	Posttest	4(4.4)	30(33.0)	45(49.5)	12(13.2)		
22. Checking for rebound tenderness.	Pretest	54(59.3)	33(36.3)	4(4.4)	0(0.0)	50,394	0.000**
	Posttest	14(15.4)	41(45.1)	28(30.8)	8(8.8)		
23. Assessment of consciousness level (using the Glasgow Coma Scale).	Pretest	52(57.1)	26(28.6)	8(8.8)	5(5.5)	63,742	0.000**
	Posttest	6(6.6)	29(31.9)	40(44.0)	16(17.6)		
24. Evaluation of extraocular movements (drawing an 'H' shape).	Pretest	71(78.0)	18(19.8)	2(2.2)	0(0.0)	64,811	0.000**
	Posttest	19(20.9)	41(45.1)	19(19.8)	13(14.3)		
25. Testing for swallowing control.	Pretest	14(15.4)	58(63.7)	15(16.5)	4(4.4)	30,138	0.000**
	Posttest	6(6.6)	30(33.0)	38(41.8)	17(18.7)		
26. Assessment of peripheral neuropathy.	Pretest	65(71.4)	25(27.5)	0(0.0)	1(1.1)	55,664	0.000**
	Posttest	22(24.2)	33(36.3)	24(26.4)	12(13.2)		
27. Examination of the motor system.	Pretest	51(56.0)	38(41.8)	1(1.1)	1(1.1)	66,057	0.000**
	Posttest	12(13.2)	32(35.2)	34(37.4)	13(14.3)		
28. Evaluation of balance and coordination	Pretest	18(19.8)	54(59.3)	17(18.7)	2(2.2)	25,412	0.000**
	Posttest	6(6.6)	34(37.4)	43(47.3)	8(8.8)		

*Chi-square test **p < 0.05

The students' total perceived stress score before the intervention was 67.05 ± 21.6 , while after the intervention, it was 57.63 ± 21.42 ($p=0.000$). Significant reductions were observed for all

subscales of the Perceived Stress Scale for Nursing Students, except for stress arising from peers and daily life ($p<0.05$) (Table 3).

Table 3. Students' perceived stress: Pretest and posttest results (n=91)

PSSNS		Mean	SD	t*	p
Stress from lack of professional knowledge and practices	Pretest	7.54	2.959	3.136	0.002**
	Posttest	6.49	2.688		
Stress from assignments and workload	Pretest	12.50	4.206	4.285	0.000**
	Posttest	10.50	3.908		
Stress from peers and daily life	Pretest	7.26	3.608	0.426	0.671
	Posttest	7.07	3.955		
Stress from taking care of patients	Pretest	19.72	6.686	4.495	0.000**
	Posttest	16.42	6.223		
Stress from teachers and nursing staff	Pretest	13.01	5.067	3.183	0.002**
	Posttest	11.19	5.103		
Stress from the environment	Pretest	7.00	2.560	3.500	0.001**
	Posttest	5.93	2.682		
Total	Pretest	67.05	21.6	3.927	0.000**
	Posttest	57.63	21.42		

*Paired-Samples T-Test **p < 0.05, PSSNS: Perceived Stress Scale for Nursing Students; SD=Standard Deviation

Discussion

This study was conducted to investigate the impact of NPT on nursing students' physical examination practices and perceived stress. One of the key findings of our research is the significant improvement in students' physical examination practices. For instance, practices such as checking for edema in the tibia, which is frequently used in clinical practice, were known to most students (56.4%) before the intervention but had never been applied. After the intervention, 50.5% of students reported gaining experience in applying these practices 1-2 times. This finding is in line with the study by Badowski and Oosterhouse (2017), which demonstrated positive effects of peer education on various practices among nursing students. In this study (Badowski and Oosterhouse, 2017), there was a significant increase in knowledge and skill acquisition between the intervention and control groups.

Peer education has been widely studied and has shown positive results in various fields. For instance, Bahar, A., Kocaçal, E., and Maraş, G. (2022), Dikmen et al. (2017), and Öztürk and Baykara (2019) found that peer education improved the fundamentals of nursing of nursing students. Moreover, Fard et al. (2020) reported that peer education was effective for wound care, Desnita and Oka Surya (2020) found that it improved the application of standard precautions, and Şahin et al. (2023) demonstrated that it enhanced pediatric clinical practice practices. Similarly, studies conducted with medical students show that peer education can positively impact patient assessment practices, as reported by Blank et al. (2013), Hannan et al. (2021), Kronschnabl et al. (2021), and Taylor and Quick (2020).

The second significant finding of our study is the decrease in students' perceived stress levels in the clinical setting after receiving NPT. The positive effects of peer leadership on students' coping with stress were also reported in studies by Yuksel and Bahadır-Yılmaz (2019) and Şahin et al. (2023). Similarly, a study conducted in Türkiye found that students working with peer mentors had lower levels of clinical stress compared to students who did not work with peer mentors (Sü et al., 2018). Furthermore, the effectiveness of peer-led training programs was demonstrated in other countries as well. For instance, a study conducted in Canada found that peer mentors increased students' self-efficacy and reduced their perceived stress (Raymond and Sheppard, 2017). Peer assessment is

another effective tool that was used to reduce student stress levels and enhance the acquisition of clinical skills. Although not reaching statistical significance, positive feedback from students indicated that peer assessment is beneficial in reducing student stress (Stewart et al., 2018). Our study, along with other research findings, demonstrated that the NPT method can effectively reduce stress levels of nursing students and enhance their physical examination skills in nursing education.

Conclusion and Recommendations

The results of this study demonstrate the positive impact of NPT in clinical settings and at the patient's bedside on the physical examination practices of nursing students. Additionally, NPT reduced the stress experienced by nursing students during their clinical experiences. Participants in the study reported feeling comfortable asking questions to their peers during physical examinations, knowing that instructors would not be evaluating them. As a result, NPT not only improved their physical examination practices but also reduced their levels of stress and anxiety. In this context, implementing NPT programs for nursing students to practice physical examinations in clinical settings is recommended. Furthermore, future studies with larger sample sizes could be conducted to compare the effectiveness of peer leaders, peer trainers, close peer trainers, and traditional teaching methods to contribute to the academic literature. Additionally, qualitative research methods could be employed to examine student views on physical examination and peer-led training in more detail.

Limitations of the Study

This study has various limitations. Firstly, it was conducted with a limited student group from only one nursing school, and the results obtained are specific to that nursing school. Therefore, these results cannot be generalized to all nursing schools. A second limitation is that students' physical examination practices were assessed through self-report. Another limitation is the absence of a control group in the study.

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What did the study add to the literature?

- Applying NPT may have positive effects on nursing students' physical examination skills.
- NPT can help reduce the stress experienced by nursing students during their clinical experiences.

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