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Effect of Applying Modified Peyton's Four-Step Approach versus Traditional Learning on Pediatric Nursing Students' Gavage Feeding Performance

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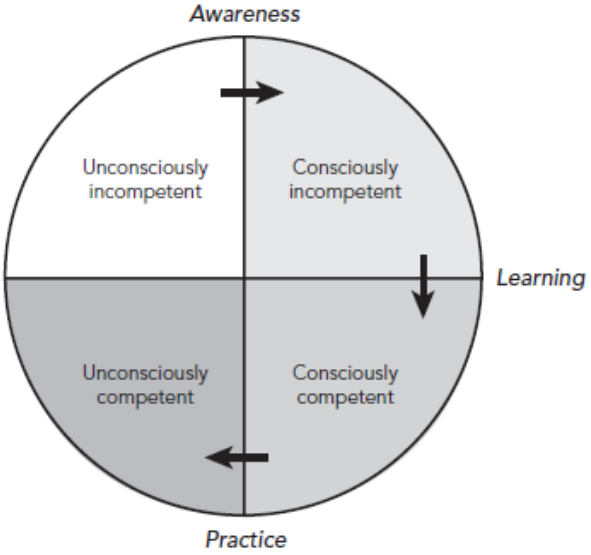
Abstract: **Background**: Gavage feeding (GF) is a regular pediatric nursing procedure, but inappropriate insertion can hurt patients. **Purpose**: To assess the effect of applying modified Peyton's four-step approach versus traditional learning on pediatric nursing students' gavage feeding performance. **Setting**: The study was conducted at the pediatric nursing laboratories, Faculty of Nursing, Menoufia University. **Sampling**: During the second semester of the 2022–2023 academic year, 300 pediatric nursing students were randomly assigned into "study and control" groups. **Instruments**: Three instruments were used (pediatric nursing student's knowledge regards gavage feeding, observational checklist for gavage feeding performance, modified Peyton's four-step approach tutors' satisfaction assessment scale). **Results**: The study showed that the students' mean knowledge scores were higher after the intervention (21.05 ±1.06) than before (7.19± 1.82). Additionally, there was a very highly significant difference (P<0.001) between the mean scores of pediatric nursing students' performance on pre- and post-test as regards to nasogastric tube insertion. **Conclusion** Pediatric nursing students' who received educational preparation via application of Peyton's four-step approach had higher level of knowledge and performance of gavage feeding than those who learnt through the traditional method **Recommendation**: Utilizing Peyton' as a teaching approach can be followed in teaching students nursing nasogastric tube feeding

Keywords: *Gavage feeding performance modified peyton's four-step approach, pediatric nursing students.*

Introduction:

Pediatric nursing is a practice-based discipline, and clinical training is essential for preparing nursing students to understand and apply clinical principles in practice. Furthermore, it is critical to recognize that what the student does matters more than what the teacher does in determining what is learned. Nursing students can practice their technical skills with actual patients or clients in a clinical setting, which can be in an open community like community health settings or a hospital like pediatric hospitals this

allows the students to engaged theories into practice (Mohammed et al., 2019). Nasogastric tube feeding (NG) is the most often enteral nutrition approach, particularly for brief feeding times. (Mohammed & Abdel Fattah, 2020). The nurse's responsibilities typically include inserting the feeding tube, giving the child food, assessing how the child is responding to the feeding, preventing and identifying any side effects that may arise from this type of therapy, such as vomiting, diarrhea, nausea, bloating, and gastric distention. More importantly, insertion NG tube is a blind procedure without the nurse's knowledge and expertise, the tube might pass through other parts of the body rather than the stomach. Because of the unfavorable outcomes of this misplacement, such as lung perforations that result in hydrothorax and pneumothorax due to the improper placement of the NGT into the pleural cavity, nurses' expertise in NG tube feeding insertion is essential to guaranteeing the safety of children (Choi, et al., 2019).



Figer1: Stages in acquiring skills (Rashwan, et a., 2023).

Students studying pediatric nursing must possess exceptional skills in order to effectively handle real-world clinical scenarios and apply their education in practical settings. Consequently, prior to performing crucial tasks on actual patients, students need to receive training in a secure setting, like skill labs. For this reason, a cutting-edge clinical training methodology like Peyton's 4-step approach must be implemented for students to enhance their subsequent skills performance in the lab, which will subsequently have a positive impact on their performance and degree of confidence in clinical settings (Cusack, et al., 2020). So, this study aimed to assess the effect of applying a modified Peyton's four-step approach versus traditional learning on pediatric nursing students' gavage feeding performance

Significance of the Study

Recently, many nursing departments' particularly pediatric nursing departments have recently encountered numerous difficulties, resulting from a number of circumstances, such as parental leave and sick days, such as a rise in students and a loss in teachers. Furthermore, not all students were able to take advantage of their experience in the NICUs because of the implementation of the infection control system in all hospitals. Just a limited number of students can be trained in these units to ensure infection control. Therefore, the faculty staff primarily uses the faculty skills labs to teach

clinical procedures in order to achieve their goals. Employees in these labs are also needed to facilitate efficient small-group instruction (Akhter, et al, 2023).

Definition of Variables:

- **Modified Peyton's Four–Step Approach**: It is a process in which a set of students chosen at random, known as tutors, receive training to teach their peers, known as tutees, from the same academic semester the methods used in obstetric nursing practice using a manikin or mannequin. Additionally, the Tutees are trained in small group instruction led by their peers on how to apply the modified Peyton's four-step technique. The steps in this process are as follows: demonstration and deconstruction; comprehension (observation and performance of the tutor); comprehension of the tutee's performance and observation; peer and tutor feedback; circulation; completion and conclusion (Emam etal., 2024)
- **Traditional Learning**: It's a method of teaching in which the teacher first teaches lecturers or presents new material to the students, then gives them consistent practice before asking them to complete independent tasks on their own, frequently as assignments outside of the classroom. It is permissible to include both direct and indirect types of learning as long as they occur in a traditional, face-to-face setting (Ahmed, 2022).
- **Gavage Feeding**: A tube inserted through the child's mouth or nose and into their stomach, used to give children nutrition or medicine directly into their stomach (Kostelnick, 2023).
- **A pediatric nursing student**: A student enrolled in a nursing program. He specializes in caring for infants, children, and adolescents, learning unique skills to address their unique healthcare needs from infancy to adolescence (Makanjeeal., 2023)

Purpose:

To assess the effect of applying modified Peyton's four-step approach versus traditional learning on pediatric nursing students' gavage feeding performance.

Research Hypotheses: -

1) Pediatric nursing students' who undergo the application of modified Peyton's four-step approach are expected to have higher level of knowledge about gavage feeding procedures than those who learn through the traditional method.
2) Pediatric nursing students' who are taught by their peers via a modified version of Peyton's four-step approach are expected to have higher level of performance regarding gavage feeding procedures than those who learn through the traditional method.
3) Pediatric nursing students' who are taught by their peers via a modified version of Peyton's four-step approach are expected to have higher level of satisfaction than

those who learn through the traditional method.

Methods

Research Design:

A quasi-experimental research design (two groups⁄ pre posttest) was used to conduct the study.

Research Setting:

The study was carried out in pediatric nursing laboratories at the Faculty of Nursing, Menoufia University.

Sampling:

A convenience sample of 300 nursing students enrolled in the Menoufia University Faculty of Nursing's Pediatric Nursing Department during the second semester of the 2022–2023 academic year. This sample was randomly assigned into "study and control" groups. The sample size: It was calculated as 300 according to power analysis with 95% confidence interval and 80% power.

Instruments:

Three instruments were used,

Instrument one: Pediatric Nursing Student's Knowledge.

It was designed by the researchers to assess student's knowledge about gavage feeding. The instrument was divided into two parts:

- **Part 1**: Characteristics of Studied Students structured questionnaire.
- It included questions about student's age, gender, residency and last certificate.
- **Part 2**: Pediatric Nursing Student's Knowledge about gavage feeding, it involved two subparts: -
  - **Subpart 1**: Four true and false questions about the purpose of an NG tube insertion, gag reflex, enteral feedings, using nasogastric for adequate gastric emptying.
  - **Subpart 2**: Multiple choice questions about signs are indicative of a positive gag reflex, duration of feedings, ensuring tube placement when preparing to initiate a gavage feeding, mode of gavage feeding delivery. One score is awarded for a correct response, and zero for an incorrect one

Scoring system:

For assessing students' level of knowledge, a scoring method was used. Total Knowledge scores were categorized as: Poor knowledge: less than 60% of the total knowledge score. Average knowledge: 60 - 80% of the total knowledge score. Good knowledge: more than 80% of the total knowledge score

Instrument two: An Observational Checklist for Gavage Feeding Procedure,

It was adapted from Khalifa et al., (2021) for assessing the pediatric nursing students' skills regards gavage feeding. It included three parts

- **Part 1**: Before tube feeding insertion such as Wash hand, Prepare the necessary equipment's,
- **Part 2**: During feeding. Place the child on the back or right side with

head of the bed elevated, Measure the tube for approximate length of insertion, measuring from the nose to the earlobe & then to the end of the xiphoid process, Lubricate the catheter with sterile water or water soluble lubricant. Tape the tube securely; Prepare the formula into the container

- **Part three**: After tube feeding insertion place the clamp on the tube after feeding & observe the patients carefully, hold, cuddle,& burp the child ,dispose the equipment's, record:- type of feeding, wash hands

Scoring system:

The items that were adequately done were scored (2), the in-adequately done items were scored (1) and the items which weren't performed were scored (0). Following computation, the final score was converted into percentage. The practice of tube feeding insertion was considered competent practice if the percent score was 75% or more and incompetent if less than 75%.

Instrument Three: Modified Peyton's four-step approach tutors' satisfaction assessment scale.

The researchers developed this instrument following a careful analysis of relevant literature Nikendei et al. (2020).It contained ten statements such as: I have learned a lot during the training session , I was continuously alert during the training, The repeated observation of the procedure was helpful, The independent performance of the procedure was helpful, and five-points Likert scale which were selected using five points Likert scale from strongly disagree (1) to strongly agree (5), made up the test. The degree of satisfaction increases with score.

Validity:

For validity assurance, the instruments were submitted to a jury of five experts in the pediatrics field (two professors, two assistant professors in pediatric nursing, and one professor in pediatrics medicine). Content validity was assessed using the content validity index average(s-cvi \ave). the lower limit of acceptability for s-cvi\ave was 0.80.

Reliability

The internal consistency of the items was evaluated using Cronbach's alpha efficiency ($a \geq 0.85$). The Cronbah's alpha coefficient test was used to confirm the three instruments' reliability. For instruments one, two, and three, the coefficient values were ($r = 0.75$, 0.79 and 0.80, respectively), which are acceptable.

Pilot study

A Pilot study was carried out on ten percent of the sample (30 student) to test the practicability, applicability, consistency, clarity, and feasibility of the study instruments to estimate the needed time to fill them. No modifications were made. The students were not included in the research subjects.

Ethical consideration

- Approval of the Ethical Research Committee in the Faculty of Nursing was obtained (No. 933, 2023)

- A written consent was obtained from the participating student related to their acceptance to share in the study. All students' data was coded, and all data collection sheets were stored in a locked cabinet to ensure confidentiality of data. Data collection sheets were anonymous. Students were assured that sharing in the study will not affect their grades. Participants were made aware that their data will only be used for research purposes.

Procedure

- **Preparatory phase**: An official letter was sent from the dean of the Faculty of Nursing, Menoufia University to the director of pediatric nursing department. The letter included purpose of the study and methods of data collection. The period of data collection was three months, starting from February and ending in April 2023. A A pretest was done to collect data about pediatric nursing students' knowledge and skills regards gavage feeding Instruments one and two were used
- **Implementation phase**: Students were randomly assigned into study group and control group in Pediatric Nursing Lab A and Lab B Students in the control group only received traditional education (demonstration and redemonstration by a teacher). Students in the study group received application of modified Peyton's four-step approach by peers. Students in the study group were randomly divided into ten subgroups, fifteen students in each (small group). The researchers trained the ten students (tutors) on how to perform the gavage feeding technique, the researchers firstly demonstrated the procedure in front of them. After that, they repeated the procedure more than one time until they were proficient at carrying it out.
- Each tutor performed demonstration and demonstration in front of their peers (tutee students).The gavage feeding technique was silently demonstrated "at normal speed without commentary" (Demonstration stage). Each peer student in the group was provided a detailed explanation of each step while demonstrating the process (Deconstruction).
- Each student in the study group was trained to perform gavage feeding procedure on a manikin using Peyton's four-step approach while the other peer students were observing (Comprehension stage). Afterwards, each tutee performed redemonstration and received input from colleagues (circulation). At the end, each tutee received input from tutor (completion and conclusion).
- **Posttest:** It was conducted after two week following the program. Students' knowledge, practices and satisfaction level were reassessed in the skill lab using instruments one and two. Each student was interviewed for about 35 minutes to assess their satisfaction using instrument three.

- **Follow up test** was conducted two weeks after posttest using instruments one, two and three.

Data analysis

Data was converted into a form that was specifically created to be appropriate for computer entry by coding it. Data was entered and analyzed by using SPSS (Statistical Package for Social Science) statistical package version 28. Number and percent were used to describe the qualitative data. The statistical information was presented as mean and standard deviation (X ±SD). If P-value ≤ 0.05, a statistically significant difference was employed. If P was less than 0.001, a high level of statistical significance was deemed to exist.

Results

Table 1 illustrated the studied sample characteristics. It displayed that more than half of the students were males and from rural communities (63.3%&62.0%) respectively. Regarding the last academic certificate, the majority of them were General Secondary School (81.3%). Also, it clarified that the mean age and standard deviation were (21.04± 0.59) years.

Figure 2 showed the mean score of studied pediatric nursing students' knowledge about modified Peyton's teaching approach. As shown in the figure, the mean score and standard deviation of studied pediatric nursing students' knowledge about modified Peyton's teaching approach on the pretest of the study group was 3.75 ±1.42 compared to 13.69 ±1.29 on the posttest. Meanwhile, the mean score and standard deviation of the control group was 0.42 ±0.68 on the pretest compared to 2.16 ±1.23 on the posttest. Therefore, there were very highly significant statistical differences (P<0.001) between the pediatric nursing students' knowledge mean scores on the pre- and post-test.

Figure 3 represented total knowledge level of pediatric nursing students in the study and control groups. It showed that approximately all study group students (98.7%) had good knowledge on posttest compared to 69.3% in control group. Also, it was evident that the study groups' knowledge levels differed in a highly statistically significant way.

Table 2 described mean score of studied pediatric nursing students' performance of nasogastric tube insertion. The mean scores of pediatric nursing students' performance on the pre- and post-test for nasogastric tube insertion clearly showed very highly statistical significant differences (P<0.001).

Figure 4 showed performance level of pediatric nursing student's in the study and control groups. As clarified in the figure the majority of studied group (85.0 %) had competent performance on posttest. Meanwhile, only about one third (34.0%) of control group had competent performance level.

Table 3 showed satisfaction of the studied sample about modified Peyton's teaching approach. Students strongly agreed that the training session was a great opportunity for learning. (20.3 %.), and they were continuously alert during the training 19.7%.

Additionally they acknowledged that repeated observations of the procedure were helpful 18.3%, and independent performance of the procedure was helpful 20.3%.

Figure 5 showed correlation between total knowledge and practice for the control group. The figure made it clear that there was a positive correlation between the total knowledge and practice of the students (represented by their Pearson scores).

Figure 6 illustrated correlation between total knowledge and practice for the study group. The figure indicated that overall practice scores and students' knowledge were positively correlated.

Table 1: Socio-demographic Characteristics of Studied Students in the study and control Groups:-

Socio-demographic Characteristics	Characteristics	Group			
		Study		Control	
		N	%	N	%
Gender	Boy	106	55.8%	84	44.2%
	Female	44	40.0%	66	60.0%
Residency	Rural	88	47.3%	98	52.7%
	Urban	62	54.4%	52	45.6%
certificate	Associate Degree of Nursing	36	64.3%	20	35.7%
	General Secondary School	114	46.7%	130	53.3%

Figure 2: Mean Score of Pediatric Nursing Students' Knowledge about Modified Peyton's Teaching Approach

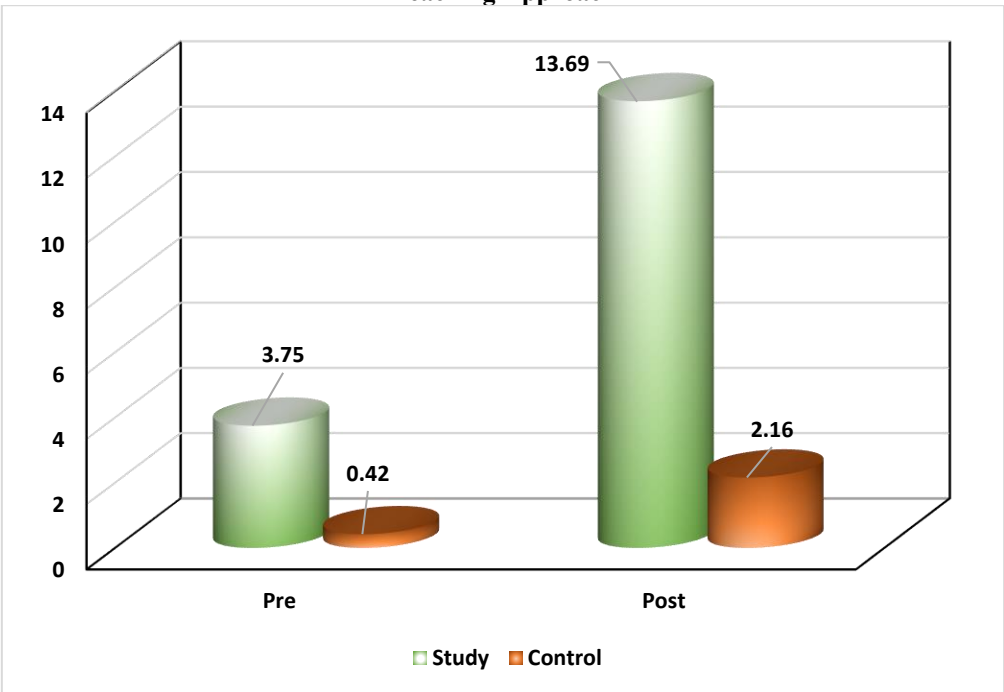


Figure 3: level of knowledge of Pediatric Nursing Students in the Study and Control Groups

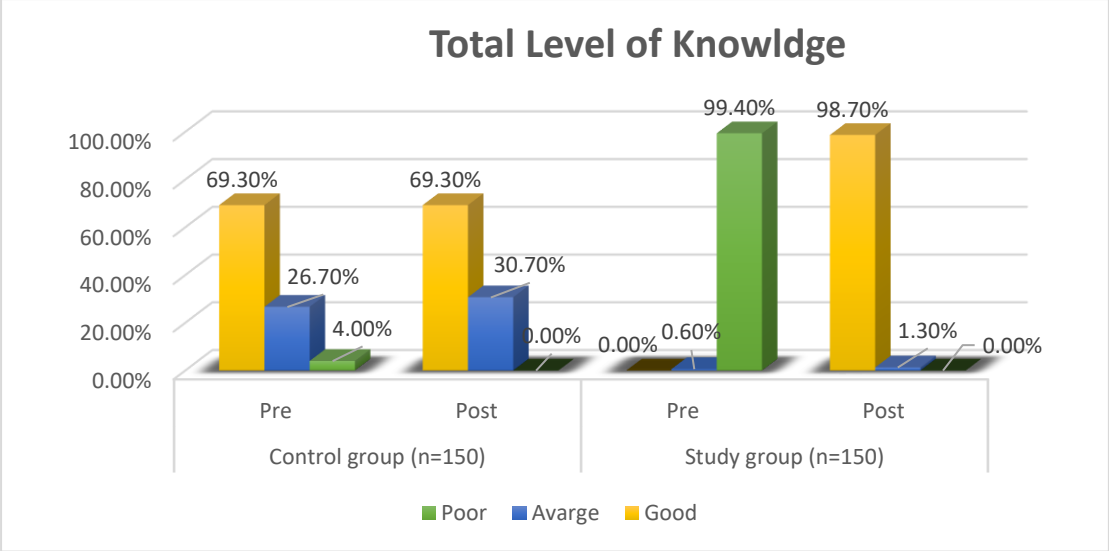


Table 2: Mean Score of Pediatric Nursing Students' Performance of Gavage Feeding Procedure.

Group	Intervention		
	Pre	Post	Significance
	Mean ±SD	Mean ±SD	P valu Mean ±SD
Study	7.19± 1.82	21.05 ±1.06	P<0.001**
Control	0.30 ±0.91	6.39 ±1.65	P<0.001**

NB: ns= not significant (p>0.05) (*) = (p<0.05) (**) = (p<0.001)

Figure 4: Level of Performance of Pediatric Nursing Students of gavage feeding n the Study and Control Groups

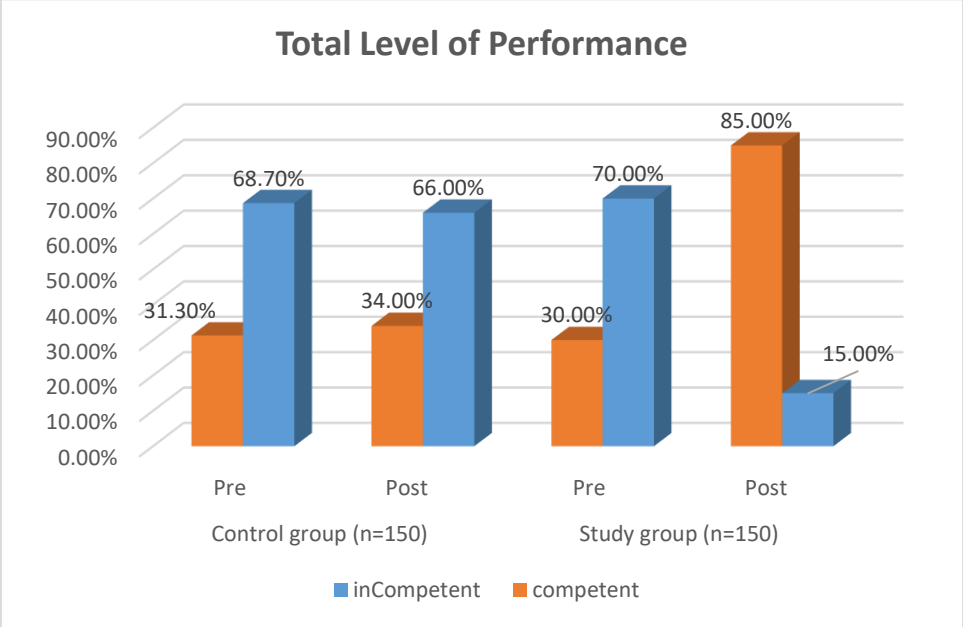


Table 3: Satisfaction of the Studied Pediatric Nursing Students of about Modified Peyton's Teaching Approach

Items	Disagree		Disagree to some extent		Agree to some extent		Agree		Strong agree	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. I have learned a lot during the training session	137	45.7	84	28.0	10	3.3	8	2.7	61	20.3
2. I was continuously alert during the training	143	47.7	76	25.3	10	3.3	12	4.0	59	19.7
3. The repeated observation of the procedure was helpful	125	41.7	89	29.7	11	3.7	20	6.7	55	18.3
4. The independent performance of the procedure was helpful	120	40.0%	95	31.7%	18	6.0%	6	2.0%	61	20.3%
5. There were too few repeated observations of the procedure	151	50.3%	69	23.0%	10	3.3%	60	20.0	10	3.3
6. There were too many repeated observations of the procedure	129	43.0	88	29.3	13	4.3	65	21.7	5	1.7
7. There were too few independent performances	120	40.0	101	33.7	20	6.7	58	19.3	1	0.3
8. Commenting on and procedure instructing was helpful	125	41.7	98	32.7	11	3.7	15	5.0	51	17.0
9. Having finished the training, I feel well prepared to practice the procedure independently	137	45.7	82	27.3	11	3.7	58	19.3	12	4.0
10. Having finished the training, I already felt secure in performing the procedure	115	38.3	104	34.7	17	5.7	54	18.0	10	3.3

Figure 5: Pearson Correlation between Total Knowledge and Practice for Studied students in the Control Group.

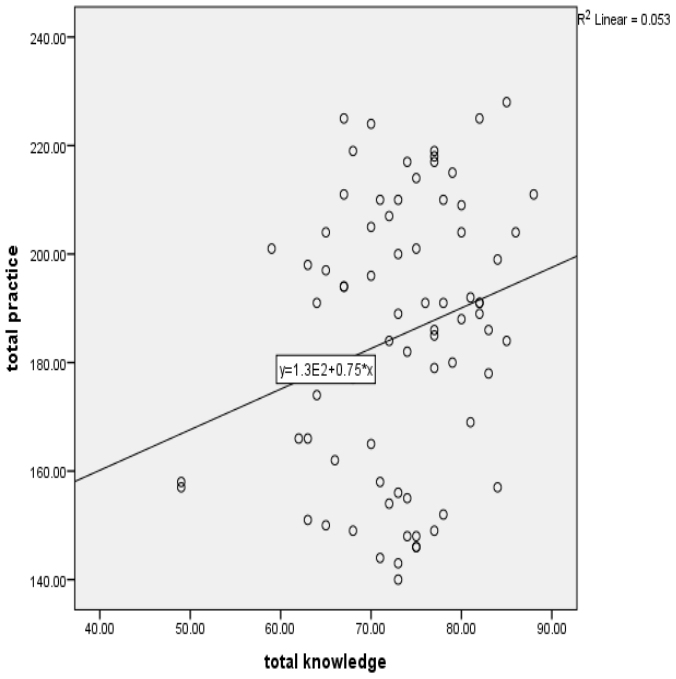
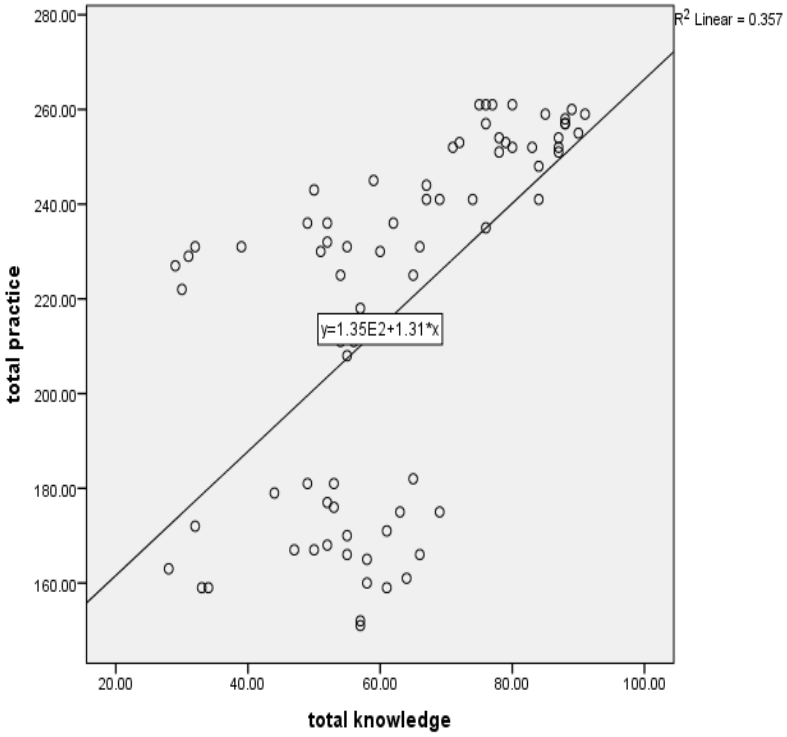


Figure 6: Pearson Correlation between Total Knowledge and Practice for the studied students in Study Group



Discussion:

Pediatric nursing education, similar to all other areas of nursing education, highlights the significant value of skill lab acquisition, skill retention, and expertise mastery. Today nursing education faces many challenges; one of these is the significant disparity between student enrollment and instructor availability, which inevitably results in a loss of student skill capabilities.

Regarding student's knowledge of Peyton's four-step method, it was obvious that the students had higher mean total knowledge scores post-intervention than pre-intervention, This finding was congruent with Zamani, et al., (2020) who conducted a study about "Endotracheal intubation training to medical practitioners: Comparison of the modified 4-step Payton's training method and Halsted's training method in a simulated environment From the researcher's perspective, this could be linked to the use of straightforward and uncomplicated teaching techniques, which helped the students gain and enhance their knowledge. Additionally, the students were eager to follow the guidelines for instruction that the researcher has discussed.

Also, peers teaching could raise the learning curve and allowed for the acquisition of new information. On the other hand, Shaaban and Mohamed (2020), and Rad, Yamani and Ehsanpour (2020), indicated that there

were no significant differences between students who are trained by peer teaching and by traditional teaching. These differences could be related to the characteristics of the participants e.g gender, residency and certificate

The majority of students, according to this study seemed to believe that the modified Peyton's technique was successful, simple to grasp, and allowed for successful class management regardless of the type of intelligence and learning style. This outcome was consistent with Skrzypek et al., (2019) who revealed that most students felt the modified Peyton technique improved understanding and that the strategy when combined with peer teaching increased concentration and focused attention, made it easier to memorize information through repeated repeats.

Regarding students' performance of gavage feeding tube insertion, the results represented that, study group participants significantly outperformed the control group in terms of performance scoring. Such a finding was agreed with Krautter et al. (2019), who discovered that Peyton's four-step strategy promotes faster practical execution than the typical "see one, do one" training method. This finding was also consistent with Romero et al. (2018), who used Peyton's four-step method to instruct students in a difficult laparoscopic skill they discovered that Peyton's group surpassed Halsted's group in terms of procedural scoring.

The outcomes of the current study demonstrated that all of the study group's students had competent performance levels for performing gavage feeding procedures after teaching using a modified version of Peyton's four-step approach, compared to roughly half of those in the control group, with a statistically significant difference between them. From the researcher's point of view, the combined effect of peer learning and Modified Peyton's four-step approach may linked to the modeling effect that originates from observing other students who share similar ages, and abilities, and experiencing the same anxiety level from the same procedure and performing it in the same academic semester. This finding comes in line with Awad & Mohamed (2019) who conducted a study about the "Effectiveness of Peyton's four-step approach on nursing students' performance in skill-lab training" which documented that there is a significant improvement in the level of performance after implementing Peyton's four-step approach.

On the other hand, Jenko et al. (2021) said that the 4-stage teaching technique does not greatly increase the quality of the performance and that changes to the curricula are required to enhance procedure quality and give students more accurate feedback.

According to the findings of the current study, it was obvious that approximately half of the control group had competent performance on the post-test, and performance improved after peers performed the procedure using a modified version of Peyton's four-step approach. From the researcher's point of view, this

improvement may be a result of the passage of time, meaning that the retention test was measured at the same time as the students' clinical evaluation of the rotation.

In contrast, Bloomfield et al., (2019) showed a decrease in nursing students' skills performance after two weeks of the application of peer learning strategy.

Concerning Pediatric nursing students' opinions about modified Peyton's teaching approach. It was clear that more than one-third of the study group strongly agreed that they were learned a lot during the training session. This result was consistent with Awed, & Mohamed, (2019) who stated that the acceptance rating scale revealed that the trainees learned a lot during the training session. In addition Khan, (2020) stated that Peyton's four-step approach might be of critical importance for improving students' practical performance. The Tutee students made it clear that they all firmly agreed that learning utilizing a modified version of Peyton's four-step approach encouraged them to share what they had learned with one another and that the procedure's overall steps aided in the quicker transfer of knowledge.

This study assumed that the students in the study group who were instructed by Peyton's four-step approach strongly agreed that they were continuously alert during the training. This was consistent with Giacomino et al. (2020) who revealed that Peyton's four-step approach impacted motor skills attainment, including the focus of attention, execution perception, motor imagery, and practical memory limits. Furthermore, more than one-third of the studied groups appreciated that repeated observations of the procedures were helpful and allowed independent performance and increased competencies. This was supported by Radwan et al., (2021) and Mohammed et al. (2019) who stated that repetitions of steps were more efficient than procedure observation only. It was supposed that frequent observations were valued training for students for their performance.

The present study's acceptance rating scale provided by students revealed that they feel well prepared & equipped to practice the procedure autonomously after finishing the training. This was also demonstrated in a previous study by Sethuraman, et al., (2021) who speculated that Peyton's four-step approach prompts a prevalent and quicker practical execution when participants demonstrated their first performance compared to a usual skill lab training method.

In this study, students confirmed that giving feedback during procedure demonstration was beneficial, in this respect, a study carried out by Mohammed, et al. (2019) emphasized that giving comments had been recognized to be extremely appropriate and helped in improving learning outcomes. Moreover, the expression of comments increases student's alertness to the exact technique.

The outcomes of the current study also revealed that students showed more acceptance and learning through

Peyton's four-step approach. This was in line with Shan et al., (2022) who emphasized that active and standardized educational experiences are important factors that increase student's knowledge, skills, behavior, and abilities to acquire clinical technical skills. Moreover, it prevents trainees from being passive bystanders. From the researcher perspective's, it might be simply due to the easygoing the atmosphere created during the process, which guaranteed that all errors were respectable and acceptable and that the researchers would correct them right away. They were inspired to learn and the process became simpler by having a tutor who shares their needs and characteristics, which increased their interaction and involvement with the process. These results corroborate those of Nourkami-Tutdibi et al. (2020), who discovered that skills-lab training with Peyton's four-step approach as a methodological teaching approach facilitates the introduction of novel clinical technical skills in a successful learning environment, particularly for small groups.

The current study's findings are consistent with a study carried out by Ahmad and Mohamed (2018) who reflected that there a significantly better performance scores among the PL group and the majority of the study group students were positively satisfied regarding PL. Moreover, they added that the majority of the students in the group stated that being taught by their peers increases interaction and collaboration with other students; they can communicate more freely with their peers than with their clinical instructor, and they don't feel freer to approach the instructor for help than their peers. Moreover, they agreed that the feedback they received from their peers is more helpful and they learn more from their peers than from their clinical instructor.

Concerning the students' focus of attention, there was strong agreement between one-third of them that the Tutors' instructions on the procedure were helpful, Tutees' commenting on the procedure was helpful, and that the current method grasped the students' attention. These findings may be justified by conducting the modified Peyton's four-step approach session in small groups who have the same level of experience. Each student could see the tutor during the demonstration of the procedure and each one of them had an equal chance to re-demonstrate it, instruct his peer to perform the procedural steps, and ask questions, in addition, face-to-face interaction, and discussion were allowed to all students. These findings were in line with Teichgräber, et al., (2021) who found that Peyton's approach made tutee students more actively engaged in the learning process.

Concerning correlation between the knowledge and performance for studies students, it was found that there was a positive correlation between the student's knowledge and their performance. This result was in line with Munster et al (2019) they assure that improvement of students practice would be due to improvement of

knowledge. In addition, this study was consistent with McKenna & French, 2019 From the researcher's perspective, this might be due to the effectiveness of Peyton's four-step approach and providing guides learner by his peer to perform the skills and ensure that the learner has understood.

Conclusion

Pediatric nursing students' who undergo the application of modified Peyton's four-step approach had higher level of knowledge and performance regarding gavage feeding procedures than those who learn through the traditional method. Also, they had higher level of satisfaction.

Recommendations: In the light of our conclusions, the study recommend that Peyton' teaching approach can be used in teaching students nursing nasogastric tube feeding. Nurse educators should be trained to use Peyton's four-step approach to help students to apply it effectively with their peers. Researches should be conducted to implement Peyton's four-step approach on a larger sample of pediatric nursing students and at other settings

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