

Peyton's Four- steps Approach Influence on Critical Nursing Students' Performance, Self-efficacy and Satisfaction Regarding Endotracheal Tube Suctioning.

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Abstract

Abstract: Endotracheal tube (ETT) suctioning is a vital procedure that requires competence and confidence. , traditional method become not effective in education and student was not competent or satisfied when they thought with it. Peyton's teaching methodology is a recent approach that is designed to improve the performance, self-efficacy, and satisfaction of Critical Nursing students. **Aim:** to determine the influence of Peyton's four-step approach on the performance, self-efficacy, and self-satisfaction of critical care nursing students in relation to endotracheal tube suctioning. **Methods:** A quasi-experimental employs a research design, The clinical critical skills laboratory at the Faculty of Nursing, Beni-Suef University, was the site of the study . Four tools were utilized to collect data: Critical care nursing students' personal and academic characteristics, Endotracheal tube (ETT) suctioning Observational Checklist, learning self-efficacy scale and Student Satisfaction In addition, Self-Confidence in Learning scale. **Results:** There were statistical significant differences between the performance, self-efficacy, satisfaction, and self-confidence of students in study and control group ($P < 0.001$). **Conclusion:** Applying Peyton's four-step strategy helps critical nursing students to improve their performance, self-efficacy and satisfaction. Regarding Endotracheal Tube Suctioning **Recommendations:** Incorporating the using of Peyton's four-step approach as a teaching strategy for all practical skills in clinical critical skills lab for undergraduate students.

Keywords: Endotracheal tube suctioning, Nursing performance, Peyton's four-steps, Self-Efficacy, Satisfaction, Critical Nursing Students.

Introduction

Nursing is a practice-based discipline, and clinical teaching is essential for preparing students to implement and comprehend clinical principles in practice. The considerable increase in the number of students in comparison to the available number of instructors is a significant challenge in the field of nursing education today which decrease the students' ability to acquire new skills. Additionally, students must actively engage in their education, which necessitates time for reflection (Mohammed, et al, 2019).

Currently, nearly all medical faculties include clinical skills lab training in their training curricula. Prior to practicing these procedural skills on actual patients, trainees can practice them on mannequins and models in a safe, "mistake-forgiving" training environment provided by skills laboratories. Effective learner-centered teaching techniques are currently being used to raise student engagement in the classroom, promote original thought, and enhance

their problem-solving skills (Bachiller & Badia, 2020).

Healthcare education continues to face a substantial challenge in the form of teaching procedural skills that are indispensable for clinical practice. Health personnel are frequently required to instruct their colleagues, subordinate staff, and students in a variety of clinical skills. Learners are able to acquire and retain these skills by utilizing frameworks, observation, and feedback, as well as opportunities for repeated practice (Burgess, et al., 2020).

The acquisition of procedures is a critical component of health professions education. Nursing students can practice clinical skills with actual patients in a clinical setting. Developing practical skills and learning through interaction with patients can be quite distressing and challenging for nursing students. They are aware that any error could harm the patient, cause injury or even death (Seifert, et al., 2020)

The performance level of prospective nurses is significantly improved by nursing education. It provides critical care nursing students with the fundamental skills required to deliver high-quality treatment to critically unwell patients. The skills laboratory implements an assortment of instructional methodologies to facilitate students' comprehension of daunting technical procedures. In the past, procedures were taught using a "see one - do one" approach, in which a teacher demonstrates and explains a procedure, and then students pose questions to further their understanding. The talent is subsequently practiced by the students, with the teacher providing modifications as necessary (Giacomino, et al., 2020).

Despite the widespread use of the "see one, do one" method, Rodney Peyton has proposed an alternative method. "The Four-Step Approach" is the name of this novel methodology, which comprises four stages. Step 1: Demonstration. The skill is executed by the teacher at a standard tempo, without the need for any additional commentary. Step 2: Deconstruction. The skill is executed once more by the teacher, who provides a comprehensive explanation of each procedural sub-step. This is the third step: comprehension. Using the sub-steps that the learners have elucidated, the teacher executes the skill for a third time. Performance is the fourth step. The learner executes the skill independently, articulating the steps without the teacher's assistance (Younis A, et al., 2023).

Payton's four-step approach has numerous benefits, particularly in the third stage, where the student instructs the teacher, which appears to be a significant factor in pupil learning. This approach incorporates a variety of learning theories. The pupil must first consider the instructions in steps 1 and 2 before sharing them with the teacher. Students are able to consolidate their ideas before actively articulating them by considering them before sharing. Furthermore, the intellectual process of self-explanation appears to facilitate the integration of novel knowledge into preexisting knowledge (Pivač, et al., 2021).

The "learning-by-teaching" approach is incorporated when students instruct their teacher during step 3. This method posits that the retention of knowledge is enhanced when it is

imparted to another individual. Furthermore, the teacher has the ability to provide corrections or suggestions in the event that a student forgets a phase or provides an imprecise explanation, thereby improving comprehension. Lastly, the fourth stage (performance) entails the student's autonomous application of the acquired skill (Khan, 2020).

Payton (1998) observed that the four-step approach facilitates the transition of pupils from "consciously incompetent" (aware of their lack of ability) to "consciously competent" (capable of performing with deliberate consideration). Frequent practice is essential for students to accomplish adequate performance in a variety of situations, which in turn cultivates confidence in their abilities. Moreover, students are more inclined to regard their abilities as indispensable for nursing care when they are highly confident in them, which results in a greater dedication to their application (Nourkami, et al., 2020).

Only when nursing students acquire strong and high self-efficacy, high self-satisfaction and confidence in their abilities, they will be able to put patients' needs first over their own needs and develop into safe and competent practitioners. Learning self-efficacy is essential for accelerating academic development and is positively correlated with effective learning strategies. The integration of interactive educational methods is effective to increase the confidence, satisfaction, self-efficacy, and clinical skills of undergraduate nursing students in the clinical environment (Liu & Xiao, 2021).

One of the most critical procedures is the suctioning of the endotracheal tube (ETT). It is imperative that students possess the ability to execute this procedure with proficiency; however, inadequate confidence renders this impossible. Additionally, students expressed that the conventional training methods for ETT suctioning were insufficient to instill a sense of competence and confidence in their abilities. This emphasizes the importance of instituting a novel clinical training program, such as Peyton's four-step approach, to enhance the performance of students in the laboratory. Consequently, this would enhance their confidence and efficacy in clinical environments (Alkubati, et al., 2022).

Significance of the study:

Critical care nursing skills are recognized as a critical factor that impacts patient safety. It is imperative that critical care nursing students receive effective education and training as they will be responsible for in the future. In addition, increase the number of the student in the last few years lead to traditional method become not effective in education and student was not competent or satisfied when they thought with it. ETT suctioning is considered one of emergency procedures that need a high professional strategy. So, In order to enhance the students' performance and influence their practical skills and confidence, A four-step approach, such as Peyton's, is essential for the implementation of an innovative clinical training strategy. (Zamani, et al., 2020). In order to optimize their performance in the skills lab, students must employ a novel clinical training methodology, such as the modified Peyton's four-step approach. This enhancement could subsequently have a positive effect on their efficacy in a variety of clinical settings, such as hospitals.

Aim of the study:

The aim of this study was to determine Peyton's Four- steps Approach Influence on Critical Nursing Students' Performance, Self-efficacy and Satisfaction Regarding Endotracheal Tube Suctioning

Research hypothesis:

The four-step approach of Peyton was anticipated to result in improved student performance, self-efficacy, and satisfaction regarding endotracheal tube Suctioning procedure than the students who were instructed and trained by using the traditional method of teaching.

Subject and Methods

Setting:

The clinical critical skills laboratory at the Faculty of Nursing, Beni-Suef University, was the site of the study, which was conducted with second-year students.

Study design

A Quasi-experimental design was utilized.

Participants

The study included a convenience sample of 100 second-year critical nursing students from the Faculty of Nursing at Beni-Suef University.

All of the students consented to participate. Two groups were established: the study group, which included 50 students who were instructed in ETT suctioning through Peyton's four-step approach, and the control group, which included 50 students who were instructed through conventional teaching methods.

Tools of data collection:

The 4 tools listed below were utilized to collect data.

Tool I: Critical care nursing students' personal and academic characteristics:

After conducting a thorough review of recent literature, the researchers developed the instrument to evaluate the personal and academic characteristics of critical care nursing students, such as their age, gender, previous GPA, and the most recent certificate they had obtained.

Tool II: Endotracheal tube (ETT) suctioning Observational Checklist:

- This instrument was created by the researchers following a review of recent literature (American Association for Respiratory Care (AARC, 2022). and This instrument was employed to assess the performance of critical nursing students in the execution of ETT suctioning, as directed by the Critical Nursing Clinical Book 2023-2024, which was created by the critical nursing personnel of the Faculty of Nursing at Beni-Suef University. It encompassed procedures for pre-procedural assessment, preparation, procedure implementation, post-procedural care, and documentation. A dichotomous scale was employed to evaluate the performance of students, determining whether the task was completed correctly (completely or incompletely) or incorrectly.

Scoring system: Total score of student's performance is 40 score, each steps was scored according to weight of each step. Students' practice in each step of ETT suctioning was scored as follows: " complete score for correct and completely done step", "half score for

correct and incompletely done step", and " zero for not done or incorrect step".

Students' performance was classified as satisfactory if their total score was 60% or higher, and unsatisfactory if it was less than 60%.

Tool III: learning self-efficacy Scale (L-SES):

Its self-report tool by students. It was formulated by (Kang et al., 2019) & Bayazit et al., 2022) and adapted by researcher to suit study aim. It used to assess learning self-efficacy for critical students. L-SES was created in accordance with Bloom's taxonomy of educational objectives and self-efficacy theories. The researchers were used L-SES to evaluate the students' perceived self-efficacy regarding suctioning procedure of ETT immediately after the application of Peyton's four steps approach and traditional teaching method using demonstration and re-demonstration. -The scale made up of 15 items and three domains cognitive, affective, and psychomotor. The cognitive domain included 6 items, the affective domain included 4 items, and the psychomotor domain included 5 items. The items of the scale were answered using a five point Likert scale ranged from "strongly disagree" to "strongly agree".

Scoring system:

- 1= Strongly disagree.
- 2= Disagree.
- 3= Undecided- Neither agree nor disagree
- 4= Agree with the statement.
- 5= Strongly agree with the statement.

- The total score of self-efficacy was classified as follows: - $\geq 75\%$ of the total score was considered high self-efficacy.

- (50% <75%) was considered moderate self-efficacy

- <50% of the total score was considered low self-efficacy

Tool IV: Student Satisfaction and Self-Confidence in Learning scale:

Its self-report tool by students. This scale was developed by the National League for Nursing (Ahmed et al., 2018) and was adapted by the researchers. Immediately following its implementation, this scale was employed to evaluate the contentment and confidence of pupils with both Peyton's Four Steps Approach and the

conventional teaching method. It was composed of five items that were specifically engineered to assess contentment with the current learning experience. The scale items were answered self-reported using a 5-point scale of Likert-type that varied from "strongly disagree" to "strongly agree".

Scoring system:

- 1= Strongly disagree.
- 2= Disagree.
- 3= Undecided- Neither agree nor disagree
- 4= Agree with the statement.
- 5= Strongly agree with the statement.

The total score of student satisfaction was categorized as follows: - $\geq 75\%$ of the total score was considered high satisfaction.

- (50% <75%) was considered moderate satisfaction

- <50% of the total score was considered low satisfaction

Tools validity and reliability

Necessary modifications were carried out in the tools of the study after testing for its content validity by five experts in the critical care nursing. Reliability of the tool was determined by Cronbach's alpha in tool III and IV, the coefficient value was ($r = 0.741$) for tool IV and (0.94) for tool III which are considered acceptable.

Pilot study:

Pilot study carried out on 10% of students under study and excluded from the sample size to test the applicability, clarity and efficiency of the tools, then the tool modified according to the results of pilot study.

Administrative Approval and Ethical considerations:

- Administrative Approval from the Ethical Research Committee of the Faculty of medicine at Beni- suif University was obtained and An official permission obtained from dean of faculty of nursing at Beni-Suef University in which the study was conducted. The researcher provided the students who were participating in the study with an explanation of the objective and intention of the study, as well as their right to withdraw or participate at any time. Informed consent was obtained from patients, if

applicable. Furthermore, the confidentiality and anonymity of the subjects' data were guaranteed.

Data collection “field work”:

Data were collected from the beginning of October 2024 to beginning of November 2024 during the 1st term. It was done through three phases:

Pre-implementation “Assessment phase”

- The coin toss method was employed to randomly assign critical care nursing students to two equal groups, study and control.
- Tool I was employed to undertake an initial assessment of critical care nursing students' personal and academic characteristics prior to the teaching sessions for both groups.

Implementation

All Critical care nursing students were separated into six groups and each group involved nearly 88 students who attend to lab area for two weeks. Every rotation, ten students were selected randomly, five students for the study and five students for the control groups. A simple random sample was obtained from each group by choosing each fifth student in the attendance list. The students were randomly and equally assigned to either the control or study group. The total time was about 3 hours a day, once every two weeks.

Implementation phase included two steps:

1. Orientation of students about each teaching method and setting objectives.
2. Demonstration of Endotracheal tube (ETT) suctioning procedure for both groups as follows:

- **For Control Group:** Endotracheal tube (ETT) suctioning procedure was demonstrated using traditional method of teaching practical skills on a manikin (two steps approach: see once and do once). The researcher was carried out the Endotracheal tube (ETT) suctioning procedure only one time (demonstration). Then, the students were allowed to perform it by himself for one time (re demonstration) under supervision of the researcher followed by the researcher's feedback.

- **For Study Group:** The researcher was carried out Endotracheal tube (ETT) suctioning

procedure on a manikin using Peyton's four-steps approach as follows:

- 1) **Demonstration:** during the first step, the researchers were demonstrated Endotracheal tube (ETT) suctioning procedure on a manikin silently at normal speed as usual but without any comment.
- 2) **Deconstruction:** then, the researcher was demonstrated Endotracheal tube (ETT) suctioning procedure repeats each step slowly adding explanation, dividing the skill into smaller sub-steps, and describing each sub- step of the procedure in details.
- 3) **Comprehension:** during the third step, the researcher was demonstrated Endotracheal tube (ETT) suctioning procedure following each student's instruction for each step while other students were observing. The student was described and explained each step of the procedure and the researcher was performed the procedure for third time following the student's illustration of the procedural sub steps.
- 4) **Performance:** finally, each student in the group was performed the procedures step by step in details illustrating all sub-steps on his own without any help from the teacher, followed by the researchers' feedback. After the researcher finished the first two steps, each student was takes from 15 to 25 minutes in the comprehension and performance steps.

III. Evaluation phase: The researcher was evaluated student' performance during all steps of the procedure; preparation, assessment, implementation, after care, and documentation using tool II.

- Students' self-confidence, satisfaction, and self-efficacy measured for both group using tool III, and IV.
- Evaluation was done immediately after implementation of Endotracheal tube (ETT) suctioning procedure to ascertain the impact of Peyton's four-step approach on students' self-efficacy, self-confidence, satisfaction, and performance in comparison to the conventional teaching method.

Statistical Analysis

The collected data were analyzed using statistical package for social sciences (SPSS 22.0) for descriptive statistics in the form of frequencies and percentages for categorical variables. Means and standard deviations were used for continuous variables. Pearson correlation coefficient (r) was used for measuring the correlation between numerical variables. Chi square tests (χ^2) were used for correlating categorical variables. Independent sample t tests were used for analyzing the mean differences between control and study groups. Significance level was set at $P < 0.05$.

Result

Table 1 summarized The distribution of personal and academic characteristics of the critical care nursing students in the subject and control groups was analyzed. In terms of age, the preponderance of students in the control and study groups were between the ages of 20 and 22 (50% and 68%, respectively). Furthermore, female pupils comprised over half of both categories (58% in the control group and 56% in the study group). Regarding their last educational certificate and work status, The majority of nursing students (76%) had completed secondary education, surpassing seventy-five percent and did not work. The study and control groups did not exhibit any statistically significant differences in terms of their academic and personal characteristics, as indicated by the chi-square tests.

Table 2 summarize the levels of studied critical nursing students' performance regarding endotracheal tube suctioning Regarding studied critical nursing students' performance regarding endotracheal tube suctioning, In the research group, the majority of students (96%) achieved satisfactory levels of performance, while the majority of students (74%) in the control group maintained inadequate levels of performance.

Table 3 show the levels of studied critical nursing students' self-efficacy regarding endotracheal tube suctioning Regarding self-efficacy levels, High levels of self-efficacy were demonstrated by the majority of students in the study group (54%), while the majority of students

in the control group (60%) exhibited moderate levels of self-efficacy.

Table 4 summarize the levels of studied critical nursing students' satisfaction and self-confidence scale regarding endotracheal tube suctioning Concerning studied nursing students satisfaction, The control group's majority of students (76%) reported moderate levels of satisfaction, while the study group's majority of students (34%; 64%, respectively) reported high and moderate levels of satisfaction. In terms of self-confidence, 52% of students in the study group demonstrated high levels of self-confidence, while 86% of students in the control group exhibited moderate levels of self-confidence. The statistically significant differences between the control and study groups were observed.

Figure 1 showed Self-efficacy, satisfaction, self-confidence, and performance comprised the overall mean score of the critical nursing students under investigation regarding endotracheal tube suctioning. Regarding studied nursing students' performance regarding ETT suctioning, the overall mean score of performance in study group (34.34±4.73) was higher compared to study group (18.93±7.90). Using independent sample t test exposed that the difference in mean score of performance among both study and control group was statistically significant ($t=11.827$, $P=0.000$).

Regarding studied nursing students' self-efficacy, the overall mean score of study group (56.20±5.99) was higher compared to study group (38.24±6.19). Using independent sample t test showed that the difference in mean score of self-efficacy between both study and control group was statistically significant ($t=14.728$, $P=0.000$).

Regarding studied nursing students' satisfaction, the overall mean score of study group (17.70±2.64) was higher compared to study group (13.74±1.75). Using independent sample t test demonstrated that the difference in mean score of satisfaction between both study and control group was statistically significant ($t=8.836$, $P=0.000$).

Regarding studied nursing students' self-confidence, the overall mean score of study group (31.06±2.48) was higher compared to study group (25.56±3.40). Using independent sample t test discovered that the difference in mean score of

self-confidence among both control and study group was statistically significant ($t=9.224$, $P=0.000$).

Table 5 summarized the correlation between the performance, self-efficacy, satisfaction, and self-confidence of critical nursing students that were examined regarding

endotracheal tube suctioning. Using Pearson correlation coefficients, there were statistical significant correlations between the performance, self-efficacy, satisfaction, and self-confidence of students in study and control group.

Table (1): Frequency distribution of studied critical care nursing students' personal and academic characteristics (n=50)

Students' Characteristics	Study Group (n=50)		Control Group (n=50)		χ^2	P-value
	No.	%	No.	%		
Age						
▪ 18<20	24	48	14	28	4.338	0.114
▪ 20<22	25	50	34	68		
▪ ≥22	1	2	2	4		
Gender						
▪ Male	21	42	22	44	0.041	0.840
▪ Female	29	58	28	56		
GPA						
▪ A+ = 4.3	4	8	2	4	6.375	0.497
▪ A = 4	4	8	6	12		
▪ A- = 3.7	6	12	8	16		
▪ B+ = 3.3	14	28	19	38		
▪ B = 3	14	28	11	22		
▪ B- = 2.7	6	12	1	2		
▪ C+ = 2.3	1	2	2	4		
▪ C or less	1	2	1	2		
Last Certificate						
▪ Institute of Nursing	11	22	12	24	0.056	0.812
▪ Secondary	39	78	38	76		
Work Status						
▪ Yes	11	22	11	22	0.000	1.000
▪ No	39	78	39	78		

Table (2): Comparing the levels of studied critical nursing students' performance regarding endotracheal tube suctioning (n=50).

Students' Characteristics	Study Group (n=50)		Control Group (n=50)		χ^2	P-value
	No.	%	No.	%		
Students' Performance						
– Satisfactory (≥60%)	48	96	13	26	51.492	0.000**
– Unsatisfactory (<60%)	2	4	37	74		

Table (3): Comparing the levels of studied critical nursing students' self-efficacy regarding endotracheal tube suctioning (n=50).

Students' Characteristics	Study Group (n=50)		Control Group (n=50)		χ^2	P-value
	No.	%	No.	%		
Students' self- efficacy						
– High (≥75%)	27	54	0	0	47.925	0.000**
– Moderate (50% <75%)	23	46	30	60		
– Low (<50%)	0	0	20	40		

Table (4): Comparing the levels of studied critical nursing students’ satisfaction and self-confidence scale regarding endotracheal tube suctioning (n=50).

Students’ Characteristics	Study Group (n=50)		Control Group (n=50)		χ^2	P-value
	No.	%	No.	%		
Students’ Satisfaction						
- High ($\geq 75\%$)	17	34	0	0	26.822	0.000**
- Moderate (50% <75%)	32	64	38	76		
- Low (<50%)	1	2	12	24		
Self-confidence						
- High ($\geq 75\%$)	26	52	7	14	16.327	0.000**
- Moderate (50% <75%)	24	48	43	86		
- Low (<50%)	0	0	0	0		

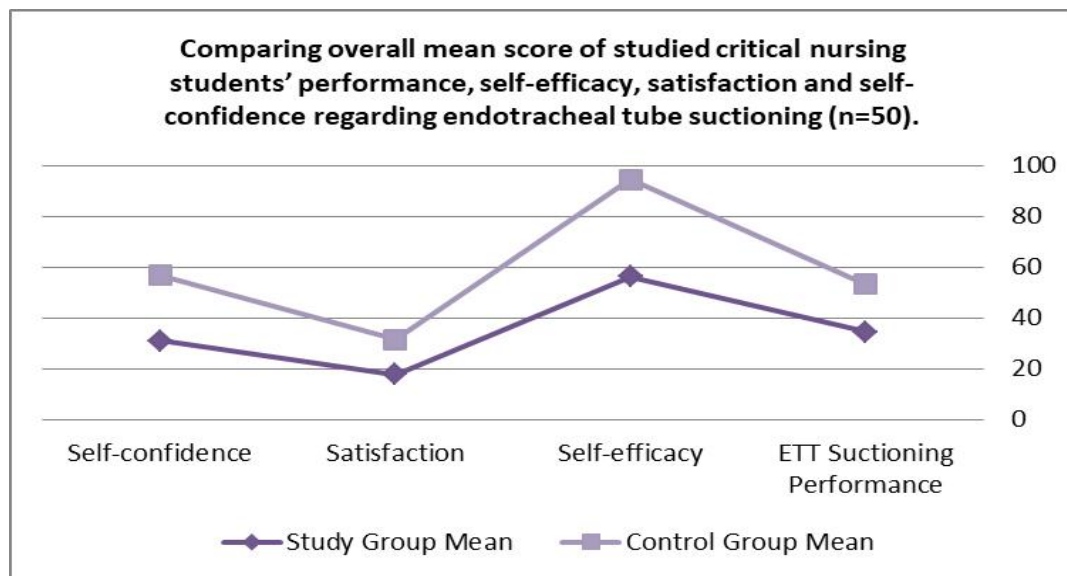


Figure (1): Comparing overall mean score of studied critical nursing students’ performance, self-efficacy, satisfaction and self-confidence regarding endotracheal tube suctioning (n=50).

Table (5): Correlation between studied critical nursing students’ performance, self-efficacy, satisfaction and self-confidence regarding endotracheal tube suctioning (n=50).

Group	Variables		Efficacy	Satisfaction	Confidence
Study Group	Performance	R	0.293	0.432	0.451
		P-value	0.039*	0.002**	0.001**
	Efficacy	R		0.278	0.367
		P-value		0.043	0.003**
	Satisfaction	R			0.435
		P-value			0.002
Control Group	Performance	R	0.467	0.498	0.397
		P-value	0.000**	0.000**	0.000**
	Efficacy	R		0.347	0.438
		P-value		0.003**	0.002
	Satisfaction	R			0.455
		P-value			0.000**

Discussion

Students in the critical nursing field must be educated and learned with an effective manner as they will be responsible for critically ill patient's soils in the future. Approach of Peyton's four-steps is a widespread methodical approach that is used to teach practical clinical skills, and it is necessary to attain success in learning and a solidly formed self-construction. Finally, with frequent practice, students will have high satisfaction, self-efficacy, and confidence in their abilities and will be able to carry out the procedure in various circumstances (**Ahmed, et al., 2018**).

Based on the results of this study, the majority of the nursing students in both the control and study groups were young adults (aged 20–22), female, had secondary education and did not work and there is non-substantial statistical differences among both study and control group regarding all their academic and personal characteristics. This may be due to two groups selected with the same characteristics to maintain reliability and homogeneity of sampling, two groups was selected from 2nd years from faculty of nursing. These resulted supported by (**Younis, Ali & Gamal Eldeen 2023**), who found that the majority of students were between 22 and 23 years, females and had general secondary school education in both study and control groups. No statistically substantial difference was observed among 2 groups regarding socio-demographic characteristics of students.

Concern studied critical nursing students' performance regarding endotracheal tube suctioning, this study result s' demonstrated that most of nursing students in the group of study reached a satisfactory performance level while most of studied students in group of control had unsatisfactory levels of performance and a highly statistically difference was found in mean score of performance among both control and study group.

Approach of Peyton may have a beneficial effect on student learning as a result of the observation, demonstration, and replication of procedural steps that occur during its implementation. Ultimately, students enhanced their independent performance, encouraged learning through instructing, and fostered active participation by performing the procedure while

commenting on each step. The strong performance of students is collectively supported and reinforced by these factors, which in turn increase their confidence in the execution of the procedural steps.

This result consistent with (Romero et al., 2018) who discovered that there was a substantial difference between Peyton's group and the other group's scores, Also with (Mohamed & Awad 2019) who stated that the students' performance scores had increased in the study group more than the control group and using The students' clinical skills were enhanced by Peyton's four-step approach to imparting clinical skills.

In addition, with (**Raghunath et al., 2020**) who reported that Peyton's four-steps approach was an acceptable method that could be used to improve students' performance, in addition, the study result of . Moreover with (**Shehata 2018**) who mentioned that there was highly statistically substantial difference among the study and control group in relation to their clinical performance scores of neonatal cardiopulmonary resuscitations were.

While, This finding is in stark contrast to the findings of (**Jenko et al., 2012**) and (**Sopka et al., 2012**),who assessed the quality of the four-step approach in comparison to conventional teaching methods. They discovered no distinctions between the two methods, either after one week or after six months. Also, (**Münster et al., 2016**) evaluated three distinct training approaches: one based on Peyton's four-step method, one that omitted Step 3, and a third that used the "see one, do one" technique with only two stages. Medical students' training outcomes were not different between the Peyton and non-Peyton techniques, according to the study.

Concern studied critical nursing students' learning self-efficacy regarding endotracheal tube suctioning

This study concluded that. The self-efficacy of over half of the students in the study group was high while the majority of studied students in control group had moderate levels of self-efficacy and The statistically substantial disparity in mean self-efficacy scores between the control and study groups was observed.

This result indicates that Peyton's four-step approach has a positive effect on the self-efficacy of critical nursing students in the execution of ETT suctioning procedures.

This result was in agreement with **(Babenco 2015)** who revealed the students acquired a high level of self-efficacy after teaching. In addition, **(Younis, Ali & Gamal Eldeen 2023)**; they found that the students' self-efficacy increased after teaching by using Peyton's four- steps approach and there is relation between both study and control group regarding self-efficacy.

Concerning studied nursing students satisfaction, The current study determined that the majority of students in the study group reported moderate to high levels of satisfaction, while the majority of students in the control group reported moderate levels of satisfaction. Furthermore, the statistically significant difference in mean satisfaction scores between the control and study groups was observed.

Researchers speculate that these outcomes could be explained by a variety of factors, including the fact that training using this method can validate skill performance and make it easier to memorize explanations and demonstrate procedures. When students demonstrated the ability silently and without comments (stage 1), Students were more motivated to critically evaluate the work and maintain their focus for extended periods as a result of the approach. The students themselves reported that it also allowed them to implement the skill in an organized manner, thereby reducing the time required to study the procedure at home (stage 2). Additionally, Peyton's methodology enabled the instructor to divide the procedure into more manageable stages, necessitating that students observe it being executed four times. Students are able to learn from their errors and their comprehension is improved as a result of the increased repetition. Furthermore, students expressed gratification with their role as instructors in stage 3, as their contributions are valued and experiential learning is promoted.

These results agreed with **(Abouelfetoh & Al Mumtin 2015)** & **(Tan et al., 2017)** who reported that students' exposure to positive learning experience affects their performance and increase their satisfaction with the teaching

method as well. In addition. Moreover with **(Al Sebaee et al., 2017)** stated that The clinical rotations of the pediatric nursing course were more satisfactorily received by students. Furthermore **(Hung et al., 2020)** found that a statistically substantial improvements was noticed in nursing competence, self-efficacy, and learning satisfaction scores after repeated exposures to simulation and Peyton's approach.

Concerning self-confidence levels, this study result concluded that The control group's majority of students exhibited moderate levels of self-confidence, while the majority of students in the study group exhibited high levels of self-confidence. These discrepancies between the control and study groups were statistically substantial.

This might attributed to patterns of behavior that mitigated detrimental impacts on students' self-assurance, including humiliation attributable to their own errors. Students' self-assurance may be enhanced as a result of their active engagement in the training process and their observation of the procedure being executed on multiple occasions. This method can improve the self-assurance of students by enabling them to regulate their errors and engage in repetition.

In agreement with the current study **(Ahmed, et al., 2018)** who stated that, The majority of students in the control group reported moderate confidence, while the majority of students in the study group exhibited high confidence in critical procedures using Peyton's Four-Step approach. The study group exhibited a statistically significant advantage over the other group. The study group's students reported that they were more assured in their ability to conduct procedures using Peyton's approach. **Also, with ("Jenko et al., 2012)** The four-stage technique was employed to evaluate the students' self-assessment. After the course was completed, the students expressed a high degree of confidence in their knowledge.

While these results In contrast with **(Sopka et al., 2012)** Utilizing a media-supported four-step approach, the students' self-confidence was assessed through questionnaires that assessed their understanding of external chest compression performance both prior to and following their training. In conclusion, the students' confidence did not exhibit any discernible variation prior to

and subsequent to the implementation of the methodology.

Concerning the correlation between studied critical nursing students' performance, self-efficacy, satisfaction and self-confidence regarding endotracheal tube suctioning. The current study's findings showed that critical nursing students' performance, self-efficacy, contentment, and confidence were positively correlated with endotracheal tube suctioning.

The present study result may be interpreted as students' skills performance level affects their satisfaction and self-efficacy level. This result was in line with the results of (Al Sebaee et al., 2017) who found that there were positive correlations between students' satisfactions, levels of performance, and their last semester achievements of nursing course. Also This result supported the results of (Hwang et al., 2016) who found that there was high effect of students' academic performance on self -efficacy levels. Moreover with (Aung & Ye 2016) who reported that there was a positive relation among the students' satisfaction levels and their achievement

Conclusion

In the light of this study's results: Peyton's four-step strategy helps critical nursing students to improve their performance, self-efficacy, and satisfaction. Regarding Endotracheal Tube Suctioning.

Recommendation

Based on the findings of the current study, it was recommended that:

Incorporating Peyton's four-step approach as a teaching strategy for all practical skills in clinical critical skills lab for undergraduate students.

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