# Basic Research

# Effectiveness of Modified Peyton's 4-step Teaching Approach on Maternity Nursing Students Acquisition of Procedural Skills, Self-confidence and Satisfaction

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#### Abstract

Background: Acquisition of procedures is an important element in obstetric nursing education. A more recent teaching approach for the acquisition of procedural skills was presented by Walker and Peyton. Modified Peyton's teaching approach which demonstrates benefit of peer learning under supervision of teachers. Aim: was to examine effectiveness of Modified Peyton's 4-step teaching approach on maternity nursing students' acquisition of procedural skills, self-confidence and satisfaction. Design: A quasi-experimental research design. Setting: this research was carried out in faculty of nursing at Benha University. **Sample:** A purposive sample of 99 maternity nursing students divided into two groups (study "Peyton's 4-step Teaching Approach "=45 students and control "conventional teaching methods"=45 students) in addition to 9 students who act as a tutor (teacher) among the study group. Tools: Four tools were used; a structured interviewing questionnaire, Performance Observational Checklist, Satisfaction Assessment Scale, and Self-confidence in learning scale. Results: showed that there was a statistical significance difference between Peyton's approach and traditional method groups regarding acquisition of procedural postpartum skills after implementation of teaching methods. Moreover, there was a highly statistically significant difference in the total mean scores of students' satisfaction and self-confidence between two groups. Conclusion: applying modified Peyton's four-step approach has a positive effect in improving maternity nursing students' acquisition of procedural skills, selfconfidence and satisfaction in performing the postpartum procedure. Recommendations: integrating the Modified Peyton's four-step approach as a teaching strategy for all practical skills in clinical obstetrics and gynecological skills lab as well as to all clinical nursing departments for undergraduate students.

**Keywords:** Acquisition of Procedural Skills, Modified Peyton's 4-step Teaching Approach & Self-confidence and Satisfaction

#### Introduction

Procedural skill acquisition is a pivotal component of health professions education. In the past, the fields of medicine and nursing, particularly obstetrics and gynecological education, have been the main focus of research on the acquisition of procedural skills. Nonetheless, other health-related fields have also created methods for teaching and assessing these skills, such as physiotherapy education (*Giacomino et al., 2020*).

Defining procedural skills is challenging. Clinical or procedural skills literally translate to "actions performed by a healthcare worker that involves or impact direct patient care." This embraces taking a patient's history, doing a physical examination, conducting clinical investigations, applying diagnostic reasoning, perfecting procedures, communicating clearly, working in a team, and acting professionally. To help with the acquisition of these skills, a number of teaching models have been developed (*Saeed et al., 2023*).

A woman's postpartum period is a delicate and transformative time, characterized by profound changes in her physical, emotional, and psychological well-being. Nurses are essential to the provision of comprehensive postpartum care because they are committed caregivers who look out for the health of both the mother and the newborn during this crucial period. For instance, administering procedural nursing skills such as funds and lochia assessment, breast care, perineal care, and episiotomy care to a postpartum woman within the first twenty-four hours of her birth is necessary (*Belleza*, 2023).

Traditionally procedures are taught using a "see one - do one" approach which is known as Halsted's teaching approach and was based on the surgeon Halsted, (1904). According to this method, students are asked to practice a procedure after a teacher explains and performs it for them. Nevertheless, some argue that the teaching methodology should be changed to emphasize "seeing many, learning from the result, and doing many" in light of the variety of current practices. Thus, Walker and Peyton (1998) created a more modern teaching strategy for the development of procedural skills (*Garg et al., 2023*).

Academic nursing institutions use a variety of teaching techniques, such as skills labs, role-plays, simulation-based learning, bedside demonstrations, etc., to improve the acquisition of procedural skills. Peyton's method is among the most widely used techniques for teaching clinical skills. According to the approach, learning is improved when feedback and repeated practice (behavior) are combined with constructivism, or the observation of skill (*Giacomino et al., 2020*).

The first step in Peyton's approach's methodology is for the teacher to demonstrate the skill without providing an explanation. Deconstruction, which entails repeating each step while providing an explanation, comes next. Subsequently, (comprehension) the student must remember each step after the teacher follows instructions. Finally, (execution) the student executes each step independently while simultaneously providing an explanation (*Naseem et al., 2020*).

The massive increase in students compared to educators has created a significant obstacle for nursing education today, as it necessitates a loss of skill acquisition. This underscores the need for higher education students to engage in active learning and take some responsibility for their education, which involves space for reflection and thought in addition to interaction with peers and experts. Furthermore, Walker and Peyton (1998), a group of expert, created a modified version of Peyton's four-step method for facilitating small group education by integrating Peer Learning (PL) with Peyton's approach. The following sequential components make up the modified Peyton's approach: Demonstration and Deconstruction, Comprehension, Tutor's Performance and Observation, Comprehension, Tutee's Performance and Observation, Tutor and Peer Feedback, E – Circulation and Completion and Conclusion (*Mohammed et al., 2019*).

In this regard, tutors can effectively implement, understand, and receive positive feedback from trainees using the modified Peyton's four-step approach to teaching in small groups. In addition to Peyton's four-step approach's potential advantages, peer learning makes it possible for clinical teaching to transition from a teacher-centered, or conventional, passive strategy to a student-centered one, or active learning where students take an active role in their education *(Christiansen and Bell, 2020).* 

Modified Payton's 4-step approach is becoming more and more advantageous because it necessitates the student to engage in reflective thinking during the initial phases prior to communicating their insights to the teacher. By doing this practice, allows learners to gather their thoughts before putting them into words. Furthermore, the cognitive process known as self-explanation appears to optimize the integration of completely new knowledge into preexisting knowledge. Moreover, it appears that friendship among undergraduate students in clinical learning settings is important to value as a significant advantage of peer learning. (*Saeed et al., 2023*).

The implementation of Peyton's 4-step teaching approach in nursing education can foster student satisfaction and confidence with the educational process. The conviction in one's own abilities is known as self-confidence. Student practice, particularly nursing students' practice in a clinical setting, is influenced by confidence (Alharbi et al., 2022). Self-confidence is a crucial component in order for nursing students to provide safe, error-free care to their patients. While students lacking self-confidence frequently envision failure before it occurs, students with self-confidence assert that students can recognize and ultimately achieve clinical objectives. In light of this, nurse education should include techniques that could boost students' self-confidence (Alsadi et al., 2023). Likewise, satisfaction refers to an individual's appraisal of their level of gratification pertaining to fulfillment. A crucial component of evaluating nursing students' motivation, contentment, and acceptance of a teaching strategy is their level of satisfaction. (Mohamed and Mohamed, 2020).

Therefore, in order to effectively support the enhancement of students' self-confidence, satisfaction, and clinical acquisition of procedural skills, nurse educators must constantly identify, implement, and evaluate teaching-learning strategies. Numerous studies have suggested Modified Peyton's 4-step Teaching Approach as an innovative creative additional teaching-learning strategy to improve the transfer of student competence and self-confidence to the clinical nursing environment (*Gheshlaghi and Ahmady*, 2022).

#### Significance of the research:

Numerous nursing departments, including obstetrics and gynecological nursing departments, are currently dealing with a number of issues, including an increase in students and a decrease in teachers as a result of various factors like sick days and parental leave. Furthermore, not all students were permitted to take advantage of the obstetrics and gynecological department's experience related to the implementation the system for infection control in all hospitals. (Only a small number of students to maintain infection control). Therefore, the faculty staff's primary means of accomplishing their goals is through the

faculty skills-labs, which teach clinical procedures and require staff members for efficient small-group instruction (*Garg et al., 2023*).

Peyton's four-step approach has been shown to have certain advantages in previously published studies pertaining to undergraduate nursing education. Among these advantages are the enhancements of learners' knowledge, practical skills, and communication, as well as the knowledge to implement practical tasks more quickly, simply, and professionally. Even though this method was used with small groups of nursing students, as far as we know, it was not formally implemented for nursing students in their faculties (*Younis et al., 2023*).

One of Peyton's teaching methods' advantages is that it may be effectively used with other learning techniques to deliver complex procedural skills and theoretical concepts at the same time. Furthermore, procedural skills-lab provides a safe, "mistake forgiving" training environment where students can rehearse skills on models or with one another before applying them to actual cases. In general, it reduces students' anxiety and intensifies their sense of satisfaction and self-confidence when they handle critical situations (*Khan, 2020*). Even though modified Peyton's four-step approach is very efficient at filling in faculty staff shortages and improving student performance, no research had been done until recently at Benha University's Faculty of Nursing to find out how peers' use of the approach affected the performance, self-confidence and satisfaction of nursing students .

#### Aim of the research:

Aim of this research was to examine the effectiveness of Modified Peyton's 4-step teaching approach on maternity nursing students' acquisition of procedural skills, self-confidence and satisfaction.

# Hypothesis of research:

- Maternity nursing students who learn from their peers utilizing the modified Peyton's fourstep approach are expected to have higher skills acquisition, self-confidence and satisfaction regarding performance of postpartum procedures than those who receive traditional learning methods.

# **Operational definition:**

**Modified Peyton's four-step approach:** It refers to a manner where a group of randomly selected students, known as Tutors, undergo training to educate their peers of students referred to as Tutees, from the same academic semester in the techniques involved in obstetric nursing practice using a manikin or model. Moreover, the Tutees receive training on how to implement the modified Peyton's four-step approach through small group teaching sessions facilitated by their peers. This process involves a sequence of steps: demonstration and deconstruction, comprehension (tutor's observation and performance), comprehension tutee's observation and performance), peer and tutor feedback, circulation and completion and conclusion.

# **Conceptual definitions:**

- **Tutors and Tutees:** Tutors encompass students who undertake the role of teachers, imparting knowledge to their peers, while Tutees denote students who are recipients of teaching from their peer's students.
- Self-confidence encompasses the extent to which the learners beliefs to perform what is expected of them, comprehension of the patient care process, make informed judgments without any doubt or mistakes.

• **Satisfaction** refers to the degree to which the learner delivers optimal care while maintaining a positive attitude, keeping the patient at the center of their focus, and demonstrating their collaboration abilities in diverse health care environments.

## Subjects and method

## Design:

A quasi-experimental (two groups "control /study", "Posttest only") research design was utilized to achieve the aim this research.

## Setting:

This research was conducted in faculty of nursing at Benha University during the course of obstetrics and gynecological nursing; the second semester of the academic year 2023/2024. **Sampling**:

## Sample type: A purposive sample

**Sample size:** A total of 99 maternity nursing students were purposely drawn from total of (498 maternity nursing students) in obstetrics and gynecological nursing department "second semester" at academic year 2023-2024.

The sample size was computed using the formula shown below (*Mani et al., 2015*). Wherever: n=sample size, N=population size (498), e=Margin of errors which is  $\pm 0.09$ 

$$n = \frac{N}{1 + N(e)^2}$$

## Sample criteria and technique:

The maternity nursing students were selected according to following *Inclusion criteria:* not attend any training sessions or lectures regarding postpartum care procedures within the domains of maternal and child-health nursing either in classroom settings or in clinical lab or in clinical area. *Exclusion criteria:* remaining students to repeat the Obstetrics and Gynecological Nursing course and had previous experience with Peyton's 4-step Teaching Approach in both groups. Each student has an equal opportunity for assignment to any of the groups; consequently, students were divided randomly (utilizing lottery system) into two groups (*study "Peyton's 4-step Teaching Approach "=45 students and control "conventional teaching methods"=45 students*) in addition to 9 students who served as a tutors (teachers) within the study group.

# **Data collection tools:**

Four tools were utilized for collecting data.

**First tool: A structured interviewing questionnaire:** Researchers designed it subsequent to an extensive review of pertinent literature. It was formulated in an Arabic language, comprising of close-ended questions and **included on the students' Personnel characteristics** such as age, marital status, gender and place of residence.

**Second tool:** An Observational Checklist: It was designed by the Nursing Staff specializing in Obstetrics and Gynecology at Faculty of Nursing, Benha University (*Obstetrics and gynecological Nursing Department 2023*) and further refined by the researchers utilizing the Obstetrics and gynecological Nursing practical manual to evaluating the skills of students in executing postpartum care procedures through a modified application of Peyton's four-step approach, as evaluated their peers. The checklist encompasses 4 key procedures: (Funds and lochia assessment "17 steps", Breast care"20 steps", Perineal care "19 steps" and Episiotomy care"19 steps").

## Scoring algorithm:

Each step was graded as follows: 2 points for completely done, 1 point for incompletely done and point 0 for not done or incorrectly done. The total performance scores varied from (0-75), which were subsequently transformed into percentages and were divided into the following categories:

- Satisfactory performance ( $\geq 60\%$ ) = (45 75 score).
- Unsatisfactory performance (<60%) = (<45 score).</li>

# Third tool: Satisfaction assessment questionnaire: It was adapted from (*Mohammed et al., 2019*) and divided into 2 parts:

**Part 1:** to **evaluate the satisfaction of tutors** in relation to the modified Peyton's four-step teaching approach, specifically when assuming the role of teacher to their peers. This part comprised of 12 statements with three continuum of the Likert scale varying from disagree (1), neutral (2) and agree (3), where a greater satisfaction level was reflected by a higher score, with the total score ranging from "12-36".

**Part 2: To assess the students' satisfaction** regarding used learning approach in both groups after the procedures had been taught to them. This part comprised of 18 statements employing a five- continuum of the Likert scale ranged from (1) strongly disagree to (5) strongly agree, A higher score indicated a higher degree of satisfaction, resulting in a total score range of "18-90".

# Scoring algorithm:

The scores were divided into percentages and categorized according to the following cutoff points:

- High level of satisfaction: when the total score  $\geq 75\%$ .
- Moderate level of satisfaction: when the total score 50 75%
- Low level of satisfaction: when the total score <50%

**Fourth Tool: Self-confidence in learning scale:** It was adapted from (*Jeffries and Rizzolo, 2006*) and composed of eight items to assess self-confidence of nursing students in learning by using Peyton's 4-step approach versus traditional methods regarding performance of postpartum procedures.

# Scoring algorithm:

Each item was rated on a five continuum of the Likert scale, which corresponded to the categories of (5) strongly agree, (4) agree (3) uncertain, (2) disagree and (1) strongly disagree. Total mean score of self-confidence was derived by computing the mean of responses across all items. The possible score ranging from 8 to 40 with the higher score indicating higher self-confidence level. The total score was divided as follows:

- High self-confidence > 75% = (33 40 score)
- Moderate self-confidence 50% 75% = (24 32 score)
- Low self-confidence < 50% = (24 score).

# Validity of the tools:

Three specialists in the field of obstetrics and gynecological nursing at Benha University evaluated the research instruments' content validity. Necessary modifications were carried out accordingly.

**Reliability of the tools**: The Cronbach's Alpha coefficient test was used to assess the reliability of the instruments, and the results showed the following internal consistency of the research tools:

Tool	Cronbach's alpha value
Tool II: Performance Observational Checklist.	Internal consistency ( $\alpha = 0.84$ ).
Tool III: Satisfaction Assessment Scale.	Internal consistency ( $\alpha = 0.80$ ).
Tool IV: Self-confidence in learning scale.	Internal consistency ( $\alpha = 0.80$ ).

## **Ethical considerations:**

Before the research was conducted, the following ethical considerations were taken into account:

A written approval was granted by the scientific research ethical committee of the faculty of nursing at Benha University REC-OBSN-P41 to fulfill the research requirements. A necessary official permission from the Dean of the Benha Faculty of Nursing was obtained for fulfillment of the research. Before applying the tools, the researchers explained the aim and importance of the research to gain nursing students" confidence and trust. The researchers obtained informed consent from nursing students to engage in the research and confidentialities were assured. The research posed no physical, social or psychological risks to the nursing students. After statistical analysis, all data gathering were discarded to enhance the students' privacy. Furthermore, the tools respected human rights and did not contain any immoral statements. Additionally, students were assured that the information would be utilized solely for research purpose without any impact on their current or future classes. Also, students were informed about the flexibility to discontinue taking part in the research at any moment.

#### **Pilot study:**

The pilot study was done on 10% of the total size of sample (10 maternity nursing students) to assess the tool's applicability, clarity, objectivity as well as feasibility of fieldwork and any potential challenges. Estimated the timeframe needed for data collection. Modifications were done based on the findings from the pilot study and the students involved in the pilot sample were subsequently removed from the main research in order to prevent sample contamination

## Field work:

In order to accomplish the aim of this research, several phases were carried out, comprising preparatory phase, interviewing and assessment, planning, implementation and evaluation phase. These phases spanned a period of three months, commencing in March 2024 and concluding in May 2024.

# **Preparatory phase**:

It's the initial phase through which the researchers reviewed of both local and international literature relevant to the research that enabled the researchers to understand the scope of the research topic, and directed them to prepare the required tools for data collection. Then pilot study was conducted.

#### Interviewing and assessment phase:

At the commencement of the interviews, the researchers welcomed the nursing students, introduced themselves, stated the aim of the research, furnished the students with needed information to assure their compliance to interventions and got their signed consent to take part in the research. Subsequently, all participant students were firstly assessed for their

personal characteristics in the classroom using a structured self-administered questionnaire (*Tool: I*) the average time needed to complete the questionnaires ranged from (1-2 minutes). During this phase, researchers start to determine the educational needs for each nursing student which help in the planning phase.

# **Planning phase:**

Generally, planning phase started by established the goals of research subject related to skills of postpartum nursing care (procedures). Then, the researchers prepared the research material and tools based on Obstetrics and Gynecology Nursing Procedures Book, Faculty of Nursing, Benha University.

The participant students were appointed by means of advertisements among Obstetrics and Gynecology nursing students. The control and the study groups were randomly allocated to lab A and B of obstetric nursing; the study group applied modified Peyton's four-step strategy through peer application while the control group used traditional learning methods.

In this research, following procedures was conducted:

- Funds and lochia Assessment
- Breast Care
- Perineal Care
- Episiotomy care
- Implementation phase:

# For the control group (traditional learning method):

The students in the control group were divided randomly into 9 sub-groups, each consisting of 5 students. The postpartum nursing care procedures were clarified using the approach of two-stage "see one, do one" in which the procedures were clarified by the clinical instructor to the students only one time (demonstration), followed by the students independently performing the procedure under supervision (re-demonstration). Subsequently, the clinical instructor was evaluated each student by using observational checklist (Tool II) one week after performing the procedures. Then, students were assessed for their satisfaction regarding traditional learning method using (Tool III). Lastly, self-confidence of all students in control group was evaluated using (Tool IV).

# For study group (Peyton's four-step Teaching Approach):

The nursing students attended in a two-hour orientation session in form of online lecture, to be trained on the process of modified Peyton's 4-step teaching approach. The researchers were gave detailed explanation about the modified Peyton's four-step teaching approach as a strategy of learning, encompassing, concept, steps of procedure, benefits and objectives through a lecture backed by Power Point slideshows.

The students were assigned randomly into 9 subgroups; each of them consisted of 6 students (constituting a small group). The nine students tutor received training from the researchers on performing the procedures of the postpartum care. Firstly, the researchers preformed the procedures in front students. Subsequently, the tutors proceeded to re-demonstrate the same procedure multiple times until attaining a proficient level as assessed by the researchers utilizing the performance observational checklist (Tool II).

• Subsequently, the six students (tutors) received training from the researchers to adopt the role of a teacher for their peers, explain and perform the procedures in presence of their peers utilizing the modified Peyton's four-step approach.

All sub-group within study group underwent training on a manikin to performing the procedures employing a modified Peyton's four-step method facilitated through their peers.

This involved a sequence of four steps; demonstration, deconstruction, comprehension, and performance (i.e., all four steps were utilized together) as follow:

- Step one (Demonstration): the skills silently performed by the researchers without any details
   " without comments and at normal speed"
- **Step two (Deconstruction):** the researchers imparted detailed instructions pertaining to each step.

**Step three (Comprehension):** students were explained every step in detail, while the researchers follows the participant's instructions.

**Step four** (**Performance**): the students were implemented the complete skill independently on their own.



• In the light of the fieldwork of present research the modified Peyton's 4-step approach was implemented according to subsequent steps:

**Demonstration and Deconstruction:** With silence, the tutor "without commentary and at normal speed" (Demonstration) carried out the procedures. Subsequently, the students (Tutors) gave Tutees a comprehensive explanation of all steps while demonstrating the procedures (Deconstruction). Therefore, the Tutor applies the modified Peyton's 4-step approach to every Tutee by carrying out Steps 1 and 2.

- **Comprehension, Tutor's Performance and Observation:** The tutors carried out step 3 by demonstrate the procedures based on the guidance provided by Tutee one for every step, while the remaining Tutees observed attentively.

- Comprehension, Tutee's Performance and Observation: Similarly, in the phase of Comprehension, Tutee one executed step 3 according to the guidance of Tutee two, which the other Tutees observed the procedures closely.

- The feedback from peers and tutors was the next step, where tutees gave each other comments and then the tutor gave input.

**Circulation:** Parts C and D are repeated by each tutee in turn until the last tutee completes step 3 after following the instructions from Tutees. Steps 3 and 4 are combined in this section, so each tutee follows a peer tutee's verbal directions to complete the procedure (Step 3: Comprehension) Succeeded by Step 4: Performance, where students concurrently performed and explained the procedure at the same time step by step.

- **Completion and Conclusion:** After the last Tutee completed steps 3 and 4, the modified Peyton's 4-step approach session came to an end, with feedback from Peers and Tutors.

- One week after performing the procedure each Tutor is invited to evaluate his/her Peers using the performance observational checklist (Tool II) during step 4 (re-demonstration).

- The researchers used (Tool III) to demonstrate the modified Peyton's four-step strategy to Peers and then assessed the satisfaction of both Tutors and Tutees. Next, using Tool IV, each student in study group completed a self-confidence assessment. **Evaluation phase:** 

The students from both groups were notified regarding the timing of the evaluation. A week following implementation, the (tool: II) was used to assess all of the students in both groups for postpartum nursing care procedures. Next, using tools III and IV, the students in both groups were evaluated for their level of satisfaction with the learning method and their level of confidence. Subsequently, solely the students in study group were asked for their provide opinions about modified Peyton's four-step strategy and the obstacles encountered during its implementation.

## Statistical analysis:

Data were checked before being entered into the computer. The collected data will undergo systematic organization, coding, computerization, and analysis utilizing suitable statistical methodologies and tests. Utilization of the Statistical Package for Social Sciences (SPSS version 22.0) was employed for this purpose. The descriptive statistical analysis encompassed frequencies, percentages, means, and standard deviations. The study hypothesis was tested using inferential statistics and the independent t test. Furthermore, the correlation coefficient was employed to explore the relationship between the scores of various study variables. P-value > 0.05 indicated no statistically significant difference, p  $\leq 0.05$  indicated a statistically significant difference for all statistical tests conducted.

#### Limitations:

There are no limitations other than the resistance of some students to implementing any new teaching strategies, such as the flipped classroom strategy.

#### **Results:**

**Table (1):** Clarifies that, (80.0% & 66.7%) of both Peyton's approach and traditional method groups were in the same age group (>20 years) with mean age of  $21.15\pm0.414$  and  $20.99\pm0.513$  years old respectively. Pertaining to gender, (51.1% & 57.8%) of both Peyton's approach and traditional method groups respectively were female. As well as, (55.6%) of Peyton's approach and (66.7%) of traditional method group lived in the rural area. Pertaining to the marital status, it was indicated that (95.6% & 88.9%) of both Peyton's approach and traditional method groups respectively were single. Therefore, there was no statistically significant difference (p>0.05) among both groups regarding personnel characteristics that reflected homogeneity of both groups.

**Table (2):** illustrates that, 64.4%, 82.2%, 83.5%, 66.7% and 71.1% in Peyton's approach group have satisfactory practical performance compared to traditional method group 42.2%, 51.1%, 44.4% and 48.9% after implementation of teaching methods regarding funds and lochia assessment, breast care, perineal care and episiotomy care; respectively. There was a statistical significance differences ( $P \le 0.05$ ) among both groups after implementation of two teaching methods.

**Figure (1):** demonstrates that (77.8 % and 46.7%) of both Peyton's approach and traditional method groups had satisfactory practical performance; respectively. Meanwhile, (22.2% and 53.3%) of both groups had unsatisfactory practical performance; respectively.

**Table (3):** presents the distribution of Tutor nursing student's satisfaction levels in study group following utilization of modified Peyton's 4- step teaching approach. It clears that all students acting as Tutors were agreement that assuming the role of an instructor instilled a sense of pride in them as they assisted their peers, alleviated their anxiety related to learning a new procedure, and underscored the significance of being competent in both teaching and practice. Additionally, this role reduced students' anxiety while executing the procedure, enhanced their seriousness in explaining and demonstrating it, promoted interaction among students, encouraged them to seek additional learning experiences, fostered a conducive learning environment, and increased their self-confidence. Furthermore, (66.7%) of the students reported that their experience in the role of an instructor significantly enhanced their EJNHS Vol.5, Issue.3

self-efficacy regarding their capacity to educate their peers, while a notable (77.8%) recognized the critical significance of operational efficiency within their academic work. In contrast, (55.6%) of students agreed that acting as an instructor led to a realization of their intellectual and professional development.

**Figure (2):** demonstrates that (88.9%) of tutors' students expressed high level of satisfaction after using the modified Peyton's 4- steps teaching approach.

**Table (4):** clarifies that, the total mean scores of students' satisfaction increased in Peyton's approach group compared to the traditional method group;  $74.68\pm2.64$  versus  $53.22\pm3.95$  respectively, with highly statistically significant differences (p $\leq$ 001).

**Figure (3):** demonstrates that (75.6 % and 26.7%) of both Peyton's approach and traditional method groups had high satisfaction after application of teaching utilized modified Peyton's 4- step approach and traditional methods.

**Table (5):** clarifies that, the total mean scores of self-confidence increased in Peyton's approach group compared to traditional method group;  $34.64\pm1.59$  versus  $26.20\pm1.71$ , respectively with highly statistically significant differences (p $\leq 001$ ).

**Figure (4):** demonstrates that, (84.5 % and 49.7%) of both Peyton's approach and traditional method groups had high self-confidence after utilizing modified Peyton's 4- step teaching approach and traditional method.

**Table (6):** clarifies that, there was a statistically significant positive correlation between total performance and (total satisfaction and total self-confidence) scores post implementation of teaching methods ( $P \le 0.001$ )

Personnel characteristics	Pey Approa (Tute	vton's ach group es) n=45	Tr: metl	aditional hod group n=45	X <sup>2</sup>	P value	Tutors students n=9			
	No	%	No	%			No	%		
Age (years):		=	-			=				
≤20	9	20.0	15	33.3	2.04	2.04	0.152	4	44.4	
>20	36	80.0	30	66.7		0.155	5	55.6		
Mean ± SD =	21.15	5±0.414	20.99±0.513		-	-	21.10±0.450			
Gender:										
Male	22	48.9	19	42.2	0 403	0.525	3	33.3		
Female	23	51.1	26	57.8	0.403	0.525	6	66.7		
Marital status:										
Single	43	95.6	40	88.9	1.39	20 0.228	0	0.0		
Married	2	4.4	5	11.1		0.238	9	100.0		
Residence:										
Rural	25	55.6	30	66.7	1.16	1.16	1 16	0.280	9	100.0
Urban	20	44.4	15	33.3			0.200	0	0.0	

Table (1) Distribution of the studied students in Peyton's Approach group and Traditional method group according to their personnel characteristics (n=90).

No statistical significant p > 0.05

**Tutors:** students who teach their peers in the role of a teacher **Tutees:** students who are receive teaching from their peers

Table (2): Distribution of the studied students in Peyton's Approach and Traditionalmethod groups according to their performance regarding postpartum nursing careprocedure (n=90)

	Pey	ton's Aj	pproach	group	Trad	litional	method gr	oup		
Groups		n	n=45		n=45			$\mathbf{v}^2$	Р	
	Satisf	actory	Unsatis	factory	Satisfactory Unsatisfactory		$\Lambda^{-}$	value		
Items	No.	%	No.	%	No.	%	No.	%		
Funds and										
lochia	29	64.4	16	35.6	19	42.2	26	57.8	4.46	0.035*
assessment										
Breast care	37	82.2	8	17.8	23	51.1	22	48.9	9.80	0.002*
Perineal care	30	66.7	15	33.3	20	44.4	25	55.6	4.50	0.034*
Episiotomy	32	71.1	13	28.9	22	48.9	23	51.1	4.63	0.031*
care			-							

\*\*A highly statistically significant difference ( $P \le 0.001$ )



Figure (1): Distribution of the studied students in Peyton's approach and traditional method groups according to total performance level (n=90)

Statements		Tutors students						
		roo	II-7 Noutral		Disagree			
	No. %		No. %		No.	%		
Serving as a teacher has made me:	1100	/0	1101	/0	1100	/0		
Feel pleased with myself for being able to help	9	100.0	0	0.0	0	0.0		
my friends.					, in the second s	0.0		
Gain more self-assurance in myself	9	100.0	0	0.0	0	0.0		
Reduce the anxiety that the students feel while	0	100.0	0	0.0	0	0.0		
carrying out the skills.	9	100.0	0	0.0	0	0.0		
Increase my self-confidence level that I can	6	66.7	2	22.2	1	11.1		
instruct/teach other students.	0							
Reduce my anxiety when I was first learning the		100.0	0	0.0	0	0.0		
procedure.		100.0	0	0.0	Ŭ	0.0		
Realize my development on a professional and		55.6	3	33.3	1	11.1		
intellectual level.			-					
Raise my level of seriousness in describing and		100.0	0	0.0	0	0.0		
illustrating the procedure.	7	77.0		22.2	0	0.0		
Recognize the value of working efficiently.	/	//.8	2	22.2	0	0.0		
Recognize the value of having the necessary	9	100.0	0	0.0	0	0.0		
qualifications for both practice and teaching.								
Encourage me to gain more knowledge and		100.0	0	0.0	0	0.0		
experience.			-		-			
Create an environment that is favorable to	9	100.0	0	0.0	0	0.0		
learning.			~		-			
Encourage more interaction between the students.	9	100.0	0	0.0	0	0.0		
Tatal testana standarda	1							

 Table (3): Mean scores of tutors students' satisfaction in Peyton's approach group regarding modified Peyton's 4-step approach (n=9)



Figure (2): Distribution of the studied tutors' students in Peyton's approach group according to total satisfaction (n=9)

Table (4): Mean scores of students' satisfaction of learning approach in Peyton'sApproach group n=45 and Traditional method groups (n=90)

		Peyton's	Traditional		P value		
Statements	Possible	Approach group	method group	Independent			
Statements	score	n=45	n=45	t-test			
		Mean ± SD	Mean ± SD				
Methodological approach:							
The teaching strategies employed in		2 64+0 88	3 38+0 88	3 93	0 000**		
learning activity were effective and helpful.		2.01_0.00	5.50_0.00	5.75	0.000		
The training method comes with a different		3.51±0.84	4.27±0.58	4.95	0.000**		
learning resources and activities.							
cher		$2.53 \pm 0.72$	3.93±0.91	8.04	0.000**		
Provides an opportunity for learning							
through repetition.	1-5	$2.33 \pm 0.82$	3.96±0.70	10.01	0.000**		
Provide a chance for participation-based		2.02 \ 0.79	4.12+0.00	7.12	0.000**		
learning.		5.02±0.78	4.15±0.09	1.12	0.000***		
The procedure observed repeatedly;							
facilitate the remembering of stages		$1.98 \pm 0.75$	$4.07 \pm 0.80$	12.67	0.000**		
involved.							
The overall procedures helped to convey		2.73±1.00	4.00±0.79	6.60	0.000**		
information more quickly.							
The procedure was not frequently observed							
again		3.47±0.89	4.40±0.72	5.45	0.000**		
There were few independent performances	1-5	2 76+0 67	4 27+0 78	9 79	0.000**		
Sequence of training was good		3 47+0 75	4 20+0 66	4 89	0.000**		
Tutees focus of attention:		5.47±0.75	4.20±0.00	4.09	0.000		
The instructions provided by teachers on							
the kills were useful.		3.53±0.89	4.38±0.65	5.12	0.000**		
Tutees' feedback on perform the procedure		2.00.0.77	4.44.0.70	2.27	0.001**		
was beneficial.	1-5	3.89±0.77	4.44±0.78	3.37	0.001**		
This method grasping the students'		2 (4 ) 0 71	4.47.0.62	5.92	0.000**		
attention.		3.04±0.71	4.47±0.02	5.82	0.000***		
Tutees comprehension of the didactic appr	oach:						
Decrease students' anxiety during the		2 89+0 83	3 80+0 84	5 16	0 000**		
procedure.		2.09±0.03	5.00±0.04	5.10	0.000		
Feel self-assurance when carrying out the		$2.56 \pm 1.11$	$4.44 \pm 0.72$	9.50	0.000**		
procedure independently.	1-5						
Increase my ability to comprehend	1.5	2.73±0.86	4.58±0.58	11.87	0.000**		
procedure better.		284:076	107:096	7.00	0.000**		
Time super diture une suitable		$2.04\pm0.70$	4.07±0.00	7.09	0.000***		
1 ime expenditure was suitable.	10.00	2.09±1.04	3.91±0.90	5.95	0.000**		
Total Mean ± SD	18-90	74.68±2.64	53.22±3.95	30.24	0.000**		

\*\**A Highly Statistical significant*  $p \le 0.001$ 



Figure (3): Distribution of the studied students in Peyton's approach and traditional method groups according to total satisfaction level (n=90)

Table (5): Mean scores of students' self-confidence in Peyton's Approach and
traditional method groups (n=90).

Items	Possible score	Peyton's Approach group n=45 Mean ± SD	Actor'sTraditionalach groupmethod group=45n=45n ± SDMean ± SD		P value
Having mastered the material of the learning activity that the teacher had given with confidence.		2.93±1.07	4.44±0.65	8.04	0.000**
Confident that learning activity included essential material required to master the clinical content.		3.22±0.67	4.13±0.69	6.33	0.000**
Confident in their ability to acquire the necessary knowledge and skills through learning activities in order to perform required skills in a clinical area.		3.07±1.00	4.42±0.75	7.22	0.000**
Instructors employed useful resources to facilitate this learning activity.	1-5	3.73±0.93	4.33±0.76	3.31	0.001**
Responsibility to acquire the necessary knowledge through learning activity		3.40±0.68	4.44±0.78		0.000**
Recognize when need assistance with concepts presented in the learning activity.		3.27±0.86	4.40±0.61		0.000**
Understand how to employ educational activities to acquire essential skills		3.60±1.03	4.33±0.79		0.000**
The instructor's responsibility to explain what needs to be learned during class about the learning activity content		2.98±1.11	4.13±0.86		0.000**
Total Mean ± SD	8-40	34.64±1.59	26.20±1.71	24.17	0.000**

\*\*A Highly Statistical significant  $p \le 0.001$ 



Figure (4): Distribution of the studied students in Peyton's approach and traditional method groups according to total level of self-confidence (n=90)

Table (6): Correlation between the studied students in Peyton's approach and
traditional method groups regarding total performance score and (total satisfaction and
total self-confidence) after implementing the teaching methods (n=90)

	Total performance score					
Variables	Peyton's A	Approach	Traditional method			
	gro	up	group			
	<b>n</b> =4	45	n=45			
	r	р	r	Р		
Total satisfaction score	0.485 0.000**		0.518	0.000**		
Total self-confidence score	0.434 0.000** 0.572			0.000**		

<sup>\*\*</sup>A highly statistical significant differences ( $P \le 0.001$ )

#### Discussion

Acquisition of clinical skills and demonstrating competency in obstetric nursing and in all areas of nursing education, are of utmost importance. Traditionally, the teaching of procedures has followed a "see one and do one" approach, in which the teacher illustrates and explains the procedures, and then the students preformed it by themselves. However, current challenges of increased students-to-teachers ratios, restricted resources, and unpredictability in the learning environment have made the process of teaching significantly harder. In light of these challenges, Walker and Peyton have proposed more new teaching methods for acquiring clinical skills. This approach, known as the Modified Peyton's 4-step teaching approach, has shown to be successful in teaching clinical and nursing skills. It involves four distinct steps: demonstration, deconstruction, comprehension, and performance (Giacomino et al., 2020).

The procedures related to postpartum care are critical for saving mothers lives and are an essential component of nursing education. Therefore, it is crucial for maternity nursing students to acquire a high level of skill, competence, self-efficacy, and satisfaction in order to perform these procedures flawlessly in emergency situations, without any errors or complications. As a result, this innovative clinical teaching method should be incorporated into the undergraduate program curriculum (Ghasemi, 2023). EJNHS Vol.5, Issue.3 44

The aim of current research was to evaluate effectiveness of modified Peyton's 4-step teaching approach on maternity nursing student's acquisition of procedural skills, self-confidence and satisfaction. The study's previously stated hypotheses were supported by the results listed below.

Regarding general characteristics of the studied students, the current research results showed that the majority of Peyton's approach group and about two third of traditional method groups were in the same age group (>20 years) with a mean age of  $21.15\pm0.414$  and  $20.99\pm0.513$  years old respectively. More than half of both groups were female. More than half of Peyton's approach group & two thirds of traditional method group lived in the rural area. The majority of both groups respectively were single. There were no statistically significant differences among both groups regarding personnel characteristics that reflected homogeneity of both groups.

These findings were in line with those of *Mohamed and Awad*, (2019), who found that the students' mean age was  $(19.5\pm1.5 \text{ years})$  with no statistical differences in personal characteristics among the studied groups. Additionally, these results went in consistency with results of *Ahmed et al.*, (2018) who concluded that almost of participants in studied groups were females. Furthermore, there no statistically significant variation was observed among the studied groups related to general characteristics.

The present research findings indicated that a greater proportion in the Peyton's approach group in comparison to less than half of those in the traditional method group, exhibited satisfactory performance one week following the implementation of teaching utilizing the modified Peyton's 4-step approach for funds and lochia assessment, breast care, perineal care and episiotomy care procedures. This discrepancy between the both groups was found to be statistically significant. From the researchers point of view, these results may be due to the influence of implementing the Modified Peyton's 4-step teaching approach, which enhances the effectiveness of these approaches, as well as the modeling impact resulting from seeing a tutor who shares the same experience, age and anxiety level during the same procedures and academic term, successfully executing the skills. Upon witnessing their peers' competence in performing the procedure proficiently, students were motivated and inspired to do the same. Lastly, during the comprehension step, each tutee could acquire knowledge by instructing other tutees.

This finding went in congruence with **Radwan et al.**, (2021), who demonstrated that the vast majority of the study group exhibited a satisfactory level of skills in carrying out the procedures. Additionally, **Raghunath et al.**, (2020) reported that, Peyton's 4-step teaching approach was deemed an appropriate technique for enhancing students' performance. Furthermore, **Mohammed et al.**, (2019) carried out a similar study among nursing students, where they applied a modified Peyton's 4-step teaching approach, facilitated by peers. The study demonstrated this approach as an acceptable strategy of clinical teaching which had a favorable outcome on the nursing students' clinical performance as evidenced by their greater proficiency in applying the CPR procedure for neonate compared to who were trained through conventional teaching methods.

Similarly, in a related study, *Sobhy et al.*, (2022) who documented that more than three quarters of the students involved in their research exhibited satisfactory practices in procedures of labor after the implementation of a 4-phase teaching method, with a significant difference observed between the intervention and control groups. In addition, this result was

in line with *Saeed et al.*, (2023) they found that, the performance scores of students in study group increased significantly more than in the control group and the utilization of Peyton's 4-step teaching approach as strategy for teaching skills proved to be beneficial for students and enhanced their clinical abilities. On the contrary, *Ahmed et al.*, (2018) declared that no statistically significant difference among nursing students' skills acquisition and retention in intervention or control groups.

The current research results found that, the most of tutors' students experienced high satisfaction level after utilizing modified Peyton's 4- step teaching approach. From the researchers point of view, these findings may be due to the impact of implementing of such approach which, allowed the student to assist their peers, helped them to alleviate any anxiety when perform the procedure for the initial instance and emphasized the importance of possessing qualification in both learning and practicing. Furthermore, this approach reduced students' anxiety while performing the procedure, enhanced the seriousness with which the procedure was explained and demonstrated, promoted interaction among students, encouraged them to look for more experiences of learning, established a setting conducive to learning and boosted their self-confidence.

These findings, which were confirmed by *Abd-El-Razik et al.*, (2019) indicated that a significant number of students who received tutoring showed a high level of satisfaction immediately after participating in teaching sessions that utilized the modified Peyton's 4-step teaching approach. Moreover, a considerable proportion of the tutor students strongly agreed that taking on the role of teacher enhanced their self-assurance that they can instruct other students and fostered an understanding of the importance of efficiency in their work. Additionally, a substantial portion of students (tutor) agreed strongly that assuming the role of a teacher helped them recognize their both professional and intellectual development. These results were further supported by *Younis et al.*, (2023) who asserted that peer tutoring techniques not only produce good academic achievement compared to traditional instructional methods, however, also enhance student's satisfaction and self-esteem and facilitate communication among students with diverse backgrounds.

In the light of our results about students' satisfaction of learning approach among the studied groups, it is an established fact that achieving success in any clinical skill necessitates not only a comprehensive understanding of the techniques and procedures involved, but also satisfaction of students which can be attained through regular practice. When considering the overall satisfaction levels of maternity nursing students with both the Peyton's approach and traditional teaching methods, it is noteworthy that more than three-quarters and more than one-quarter of the both groups expressed a high level of satisfaction following utilizing of modified Peyton's 4-step teaching approach and traditional method. From the researcher's point of view, this finding can be clarified in the light of advantages of such teaching approach which facilitates the development of clinical skills, satisfaction and self-efficacy of students in practices.

This finding corresponded with *Alsadi et al.*, (2023) that demonstrated significant difference in satisfaction levels among the two groups. The researchers also observed that most of students in study group exhibited a higher satisfaction with Peyton's approach after performing cardiopulmonary resuscitation procedure. Similarly, *Windle*, (2020) reported in their study that nursing students expressed satisfaction with the teaching experience involving guided imagery. Furthermore, this result was in line with *Hung et al.*, (2020) found a

statistically significant enhancement in the self-efficacy, proficiency in nursing and level of satisfaction after repeated exposure to education through simulation.

Pertaining to students' self-confidence, the current research results the indicate that, the most of Peyton's approach groups and less than half of traditional method groups demonstrated a high level self-confidence after utilizing the Peyton approach and traditional method with highly significant difference in terms of statistics. From the researcher's point of view, these results could be attributed to students' observation, and repetition of the procedural steps, which take place during the implementation of Peyton approach. Ultimately, students executed the skills while providing commentary on every step, which enhanced their independent accomplishment and fostered involvement in active participation. The all characteristics have the potential to support and reinforce students' proficiency, thereby instilling confidence in their execution of the procedural steps.

This result corroborates the findings of *Sobhy, et al.*, (2022) reported a statistically significant difference among the intervention and control groups following the utilization of teaching method including four-phase in terms of self-confidence and satisfaction. Additionally, *Younis et al.*, (2023) revealed that most of the students in the study group exhibited higher level of self-confidence in performing the CPR procedure using Peyton approach, whereas most of the students in the control group demonstrated a moderate level of confidence. Importantly, a statistically significant difference between the two groups was observed, favoring the study group.

Finally, our research findings illustrated that there were a statistically positive correlation among total performance and total satisfaction and total self-confidence scores in both groups after using Peyton teaching approach and traditional method. The current research result may be interpreted as students' skills acquisition level affects their satisfaction and self confidence level.

The present research results matched with *Younis et al.*, (2023) revealed that, there was statistically significant positive correlation among total scores of skills acquisition, self-efficacy, and satisfaction of students in the study group related to infants' cardiopulmonary resuscitation immediately after teaching. Furthermore, *Al Sebaee et al* (2017) agreed with us and illustrated that there were positive correlations between students' satisfactions and levels of performance.

#### **Conclusions:**

Based on the findings derived from the present research; it was concluded that the research hypothesis was supported and the application of a modified Peyton's four-step approach as a teaching strategy had a positive effect in improving maternity nursing students' acquisition of procedural skills, self-confidence and satisfaction in performing the postpartum procedures in the study group, in comparison to the traditional method group with highly statistical significant differences. Additionally, there were a statistically positive correlation among total performance and total satisfaction and total self-confidence scores in both groups after using Peyton teaching approach and traditional method. Therefore, the effect of application of a modified Peyton's four-step approach was reflected.

#### Recommendations

Based on the aforementioned research results, it was recommended that:

- Integrating modified Peyton's 4-step approach as a teaching strategy for all practical skills in clinical obstetrics and gynecological skills lab.
- Application of modified Peyton's 4-step approach ought to be extended to all clinical nursing departments for undergraduate students.
- Incorporating Peyton's 4-step teaching strategy as innovative method of teaching in the undergraduate and graduate degree curricula.

## Further research:

• Repeat the study with a greater number of students.

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الملخص العربى فعالية منهج بيتون المعدل في التدريس المكون من 4 خطوات في اكتساب طلاب تمريض الأمومة للمهارات العملية والثقة بالنفس والرضا الخلفية: يعد اكتساب المهارات العملية عنصرا هاما في تعليم التمريض التوليدي. تم تقديم نهج تدريسي أحدث لاكتساب المهارات العملية من قبل ووكر وبيتون. تم تعديل منهج بيتون التعليمي الذي يوضح فائدة التعلم من الأقران تحت إشراف المعلمين. الهدف: اختبار فعالية منهج التدريس المعدل المكون من 4 خطوات لبيتون في اكتساب طلاب تمريض الأمومة للمهار ات العملية والثقة بالنفس والرضا. التصميم: تصميم شبه تجريبي. مكان الدراسة: تم إجراء هذا البحث بكلية التمريض بجامعة بنها. العينة: عينة غرضية مكونة من 99 طالب وطالبه تمريض أمومة مقسمة إلى مجموعتين (دراسة "منهج بيتون في التدريس ذو الأربع خطوات" = 45 طالب "طرق التدريس التقليدية" = 45 طالب) بالإضافة إلى 9 طلاب يقومون بدور المعلم (مدرس) ) بين مجموعة الدراسة ادوات الدراسة : تم استخدام أربع أدوات؛ استبيان المقابلة المنظم، وقائمة مراقبة الأداء، ومقياس تقييم الرضا، ومقياس الثقة بالنفس في التعلم. النتائج: أظهرت النتائج وجود فرق ذو دلالة إحصائية بين منهج بيتون والطريقة التقليدية فيما يتعلق باكتساب الطلاب المهارات العملية بعد الولادة بعد تطبيق طرق التدريس، علاوة على ذلك، كان هناك فرق ذو دلالة إحصائية عالية في متوسط درجات رضا الطلاب والثقة بالنفس بين المجمو عتين الخلاصة: يوجد تأثير إيجابي في تحسين اكتساب طالبات التمريض للمهارات والثقة بالنفس والرضا في أداء المهارات العملية بعد الولادة. **التوصيات:** ينبغي دمج نهج بيتون المعدل المكون من أربع خطوات كإستر اتيجية تدريس لجميع المهار ات العملية في معامل مهارات التوليد وأمراض النساء السريرية وكذلك لجميع أقسام التمريض السريري لطلاب المرحلة الجامعية.