Role modeling: its effect on Maternity Nursing Students' achievement, Anxiety, and Self-Confidence at labor area

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Abstract: **The clinical practice is a very important part of the nursing course. The nursing students report significant anxiety when anticipating their first clinical day, this leads to decreased self-confidence in clinical performance necessary to provide safe care for women. Nurse educators must be aware of anxiety levels and self-confidence to intervene appropriately to foster the best learning outcomes for students so the aim of the study is to evaluate the effect of role modeling as teaching method on maternity nursing students' achievement, anxiety, and self-confidence at the labor area. Design: A comparative quasi-experimental posttest was used to conduct the study. Setting: The study was conducted at the Maternity lab at Faculty of Nursing, As well as the Maternity department at Fayoum University Hospital. Sample: A Convenient sample of 240 nursing students in Maternal and Neonatal Health Nursing Department, enrolled in the academic year 2017/2018 were included. Tools used to collect the data were; I. A structured self-administered questionnaire, II. State-trait anxiety inventory, III. Confidence scale, IV. Practical achievement assessment tool and V. Attitude assessment tool. Results: The study** *findings* **revealed that there were significant differences between role modeling group and traditional group regarding students' clinical performance, self-confidence and anxiety level through the maternity skills at the labor area. As well as the student taught by role modeling exhibit a more positive attitude regarding the teaching method used in the clinical course more than whose in the traditional method. Conclusion: Role modeling significantly enhanced the students' achievement, self-confidence and reduce the anxiety level in the labor area. Recommendation: Integrating the role modeling as a teaching method in all clinical nursing practice curriculums.**

Keywords: **Role modeling, Students' achievement, Self-confidence, Anxiety level.**

1. INTRODUCTION

Nursing education consists of a theoretical and practical training, which provided to the nursing students to prepare them for their woks as professional nurse [1]. This education is provided by qualified or experienced nursing teachers and other medical professionals for educational tasks.[2]Nursing education serves as a catalyst to lead innovation in academic nursing that promotes team-based, inter-professional health care.[3] Maintaining the quality and safety of care is essential when meeting patient care needs. In order to provide high quality and safe nursing care to patients, nurses need to be competent in clinical nursing skills. Complete mastery of clinical skills is one of the tasks nursing students should achieve during their study at a nursing college. Learning clinical nursing skills is a prerequisite not only for a successful and confident nursing career but also for the facilitation of critical thinking, cultivation of deep interest in the profession, and most important for the overall improvement of patient care.[4]

Throughout clinical nursing practice curriculums, students are confronted by situations that generate anxiety and psychological pressure, thus bringing relevance to study of these aspects amongst them. Students through the "professionalizing nursing courses" are demanded especially at practical skills, such as performing invasive procedures.

[5]. Anxiety does not have a precise definition and there is little agreement among scholars. It may be perceived, however, as an emotion characterized by tense and physically exhausting alert, focusing a sensation of imminent and inevitable danger [6]. At the anxiety study, we find two distinct concepts: anxiety-state, referring to a transitory emotional state, characterized by subjective emotions of tension, which may vary in intensity through time, and anxiety-trait, referring to a personal disposition, fairly stable, to answering with anxiety to stressful situations and a tendency of perceiving a greater number of situations as threatening [7].

Anxiety can impact how nursing students think and provide care in the clinical setting. Mild anxiety may enhance learning but, as anxiety increases, learning decreases. [8] Actually, high anxiety levels may affect negatively the students' performance in clinical sitting and exhibit a threat to success in the clinical rotation. [9] When the nursing students learned with non-traditional methods that adjusting them to face the anxiety and stress in the clinical area. Although traditional method of education does teach the nursing students a certain amount of information, related to many specialties, it does not equip them with the tools that improve graduate nurses' critical thinking, facing anxiety in the clinical setting and organize new information required for effective learning. [10]

Self-confidence is very important for nursing students especially in the clinical area to provide safe care. [11] Self-confidence is the possibility that an individual has to demonstrate a belief in the success, capabilities, and skills, in a given context. It must be achieved with wisdom, experience, success, support and training and, to be maintained, persistence, self-awareness and positive thinking are needed. As a result, it leads to stability of autonomy and positive results. Self-confidence is related to self-efficacy. It is the degree of conviction and success for achieving a result, acting decisively in the mode of action, behavior, organization, thought patterns and emotional reactions. It is a measure of self-perception and belief in one's own abilities.[12]Therefore, it is great of importance that the roles of universities, change, especially in the medical and paramedical faculties as nurses of only a store of knowledge; and teachers just store of lecturers, transfer of knowledge and learning; instead of merely learning and memorizing. Students should improve their thinking and inference skills and learn how to analyze information and use it whenever needed, as well as facing the source of the anxiety in the clinical setting and increase their self-confidence to provide safe and effective care. [13]

Role modeling is one of the teaching strategies, especially in the clinical practice area. It is different from mentoring and teaching in the sense that "a teacher … facilitates learning, while role-models are persons from whom [one] wants to gain some of their attributes.[14] Some authors utilized the term "role modeling" to indicate deliberate teaching interventions; such as demonstration of skills and/or behaviors, which are intended to achieve specific learning objectives. [15] Role modeling is described as being "teaching by example and learning by imitation. [16] Skillful role models could enable students to discover knowledge embedded in clinical practice where they can work with and observe a role model that enables them through a process of reflection, to internalize the role models' behavior and build on previous knowledge and experiences. [17]

Role models who portray positive attitudes and are approachable play a crucial role in supporting students in the clinical learning environment. Important learning, including the teaching of concepts, theory, critical thinking skills and research happens in the classroom but is best integrated with the skills learned in the clinical setting where integration of theory and practice takes place. [18] Patients expect to be cared for by nurses who are not only competent but also behave professionally, therefore student nurses must be supported to develop professional qualities. [19]

The educational value of "role modeling" as a teaching method depends on how it is defined. If defined as a demonstration of skills and provision of feedback after observing the students' performance, then "role modeling" is a crucial component of the clinical training. If role modeling refers to a conscious or unconscious unselective imitation of a role model's behaviors and/or unacknowledged (hidden curriculum) messages of the learning environment, then its benefits should be weighed against its unintended harm. The benefit of imitation is that it helps students' initial coping with the overwhelming challenges of the clinical rotations, which have been described as "how to survive in a threatening environment.[20]

Significant of the study:

Most of the maternal and neonatal morbidities are avoidable by applying very basic principles to our day-to-day practice and by revisiting the basic practices. The presence of skillful qualified and competent maternity nurses and optimal student learning for high-quality maternity care is a leading factor in averting maternal death and disability. The clinical

learning experience is an essential part of nursing education; students are rotated through a variety of settings, each semester bringing a new clinical setting that can be challenging, unpredictable, and anxiety provoking, especially labor and delivery area in the maternity nursing department has many skills for women and neonates, which considered source of anxiety for nursing students. In addition, the labor environment itself also considers a source of anxiety. Anxiety and stress levels may deliver learning difficulty; as high stress and anxiety levels present a substantial effect on attention, with the possibility of leading to errors, which will affect performance, causes lack of concentration and oscillation of attention levels. If the maternity nursing student can't cope with this anxiety will affect their self-confidence as well as their performance in the clinical area. Therefore, the teaching strategies should enable the learners to cope with these challenges. Role modeling is a teaching-learning process in which the students teaching by example and learning by imitation and familiar the student with the new clinical environment before facing it, as well as provide students with realistic clinical learning environments. However, nursing education literature reflects varied research gaps and supports the necessity for additional nursing research that explores the effectiveness of "role modeling" as a teaching strategy within the clinical nursing practice courses for undergraduate nursing education. Therefore, the purpose of this study was to evaluate the effect of role modeling as a teaching strategy on maternity nursing students' achievement, self-confidence, and anxiety in the labor and delivery area.

Aim of the Study:

The current study aimed to evaluate the effect of role modeling as a teaching method on maternity nursing students' achievement, anxiety, and self-confidence in the labor area. This aim will be achieved through:

1. Filming practical skill videos for specified maternity nursing procedures, which related to the labor area in real maternity hospital according to Maternal and Neonatal Health Nursing course, and testing its validity and reliability and implement it.

2. Compare the students' achievement, anxiety and self-confidence level who subjected to role modeling as a teaching method with who subjected to traditional teaching.

The study hypothesized that:

H1: Role modeling as a teaching method will improve the Maternity nursing students' practical achievement more than those who will be taught by the traditional method.

H$_2$: Role modeling will have a significant effect on the reduction in maternity nursing students' anxiety level as well as an increase in self-confidence level compared to nursing students who taught by the traditional method.

2. SUBJECTS & METHODS

Design: A comparative quasi-experimental "posttest" design was utilized to achieve the aim of the study.

Setting: The study was conducted at the Maternity nursing lab in the Faculty of Nursing, Fayoum University. It contains low fidelity full-body simulated parturient women mannequin; with working programmable fetal monitor and delivery stages. As well as the Maternity department at Fayoum University Hospital.

Subjects:

A convenient sample of (240) nursing students in Maternity and Neonatal Health Nursing Department at Faculty of Nursing, Fayoum University, enrolled in the academic year 2017/2018 were included. All nursing students enrolled in the first term (120 students) subjected to traditional lab method and made up the control group; while the study group included all of the nursing students enrolled in the second term (120 students) and those were subjected to role modeling method.

Tools of data collection:

After reviewing related literature to fulfill the aim of the study, five tools were developed by the researchers.

Tool I. A Structured Self-administered questionnaire: It consisted of (4 questions), was used to assess the general characteristics of the students as: age, gender, previous educational certificate, and prior experience with delivery.

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Tool II. State Trait Anxiety Inventory (STAI) [21]:

The STAI-Y1 was used to assess the students' self-perceived anxiety. The tool is a self-reported measurement tool with 40 four-point Likert scale items. The tool has two components: STAI-Y1 and STAI-Y2. Items 1-20 measure situational or state anxiety (STAI-Y1) while the second part measures trait anxiety. For this research study, only state anxiety, STAI-Y1, was assessed given that situational anxiety was the focus of the study. *Spielberger et al.,* [21] defines the state or situational anxiety as unpleasant feelings of apprehension, tension, nervousness or worry, often accompanied by activation of the autonomic nervous system. In other words, situational anxiety reflects how threatening a person perceives his or her environment to be. The STAI-Y1 is composed of 20 self-report questions, which take approximately five minutes for an average college student to complete .The questionnaire is comprised of four-point Likert-type items with a balance between anxiety-present and anxiety-absent items (e.g., "I feel frightened; "I feel upset"). The participants choose the number which best describes the intensity of their feelings: (1) not at all, (2) somewhat, (3) moderately, (4) very much so. Scoring of the STAI-Y1 is weighted, meaning that, for each anxiety-present item is scored from 1-4, a rating of 4 indicates the highest level of anxiety. For anxiety-absent items, scoring is reversed. Ratings of 4 for the anxiety-present and anxiety-absent items indicate the presence of a high level of anxiety. Scores range from 20 to 80. A high score on STAI-Y1 correlates with a high state anxiety score. Reliability was established using Cronbach's alpha (0.96).

Tool III. Confidence scale (C-Scale): a self-report tool was used to measure students' self-confidence during performing psychomotor skills. It is measured with the modified scale version originally developed by **Hicks et al., [22]** the questionnaire comprised (11 items) were rated using a 5-point Likert scale, it ranged from (1=strongly disagree to 5=strongly agree). It assessed the confidence level on 8 domains as follows: (1) recognizing a problem or change in patient conditions, (2) performing assessments of patient conditions, (3) interpreting the data, (4) identifying the intervention for patient conditions, (5) evaluating the effectiveness for patient conditions, (6) communication, (7) patient safety, and (8) role of team members. The higher scores indicating greater self-confidence. Scoring system categorize students self-confidence level into: very confident (38-55), moderately confident (19-37) and non confident (1-18). Reliability was established using Cronbach's alphas (0.94).

Tool IV. Practical Achievement Assessment Tool (Observation Checklist). [23]

The observation checklists are approved by the Ministry of Higher Education, the Scientific Research (MOHE), and the Supreme Council of Universities (SCU). It was used as an innovative approach for the development of Clinical Learning Guides (CLGs) and Clinical Skill Checklists (CCLs), to assess student's abilities in applying steps of the practical skills related to obstetrics and gynecological semester. It was used to assess the students' performance in the delivery area during 1st, 2nd, 3rd stage of labor and the immediate care of the newborn. Each specified nursing procedure included three phases: **Phase 1**: Preparation phase, it includes the equipment and the preparation steps of the procedure; it represents 20% of the total score. **Phase 2:** Procedure steps, it displays the main steps and explanation of the procedure; it represents 60% of the total score. **Phase 3:** Post procedure steps, it deals with the steps to be done after the procedure; it represents 20% of the total score. Each item in each procedure was scored (3) if competently performed; scored (2) if incompletely performed, and scored (1) if the task is not performed. The level of nurses' performance was categorized into three distinct levels; a) Scores ($\leq$ 33.3%) were considered as unsatisfactory, b) Scores (< 33.3 -66.7%) as incomplete satisfactory and c) Scores (>66.7) as completely satisfactory. Reliability was established using Cronbach's alpha (0.89).

The specified nursing procedures included the following: 1) Management of 1st stage of labor; 2) Management of 2nd stage of labor; 3) Management of 3rd stage of labor; and 4) Immediate care of newborn. These specified nursing procedures where the students practicing in the labor area according to the maternity curriculum.

Tool V: Attitude assessment tool "Likert scale": This tool was used to assess the maternity nursing students' attitude toward the teaching strategy. The scale adapted from **Willis et al. (2010),[24]** consists of three levels of response "disagree", "uncertain" or "agree". The scale consists of ten statements. Reliability was established using Cronbach's alpha (0.94).

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The scoring system was as the follows:

- Positive attitude was considered if grades were more than 20,

- Uncertain attitude was considered if grades were 20,

- Negative attitude was considered if grades were less than 20.

Pilot study:

A pilot study was carried out on 10% of the total sample size. It was carried out to evaluate the content validity, efficiency of the tool, and to find the possible obstacles and problems that might be faced during data collection. Students included in the pilot study were excluded from the sample, to avoid contamination of the research sample.

Tool validity and reliability:

The data collection tools were reviewed by a panel of three experts in obstetrics and gynecological nursing field to test the face and content validity. Each of the experts was asked to examine tools for content coverage, clarity, wording, length, format and overall appearance. Modifications were done according to the comments "rephrasing for three questions". Reliability: Alpha Cronbach's alpha test was used to measure the internal consistency of the tools used in the current study.

Administrative and ethical Consideration:

An official approval was obtained from Dean of Faculty of Nursing, Fayoum University as well as the director of Fayoum university Hospital before starting the study. The researchers explained the aim of the study to the students and informed consent to participate was obtained. Students who were willing to participate in the study were approached by the researchers, and were informed that each participant had right to withdrawal from the study at any time without any effect on their current or future academic course assessment. They were assured that all data that obtained were considered confidential and used for the research purpose only.

Field Work:

The process of the data collection was carried out in the academic year 2017/2018, beginning from October 2017 till May 2018. Students in the first semester "control group" (n=120) were subjected to the traditional method of teaching while students in the second semester "study group" (n=120) were subjected to the role modeling teaching method. Data collection procedure has been done through four phases; assessment, planning, implementation, and evaluation phase.

Assessment phase: this phase conducted by the researchers in the classroom at the Faculty of Nursing, Fayoum University where the researchers met the students and explaining the aim of the study, and reassure them that information collected would be used only for the purpose of the study. The researchers explained to the students the proper way to fill the data collection tools with accurate data, and then all students in both groups were assessed for personal data and past clinical experience at classroom by self-administered questionnaire (Tool I).

Planning phase:

The researchers filming a practical videos for the labor area related clinical nursing procedures according to Maternal and Neonatal Health Nursing course at the faculty of nursing, Fayoum university as the following: Management of first stage of labor-related procedures including "Abdominal Examination & Fetal Heart Rate, and uterine contraction assessment"[50 minutes); management of second stage of labor-related procedures including "Handling of labor"[40 minutes]; management of third stage of labor-related procedures including "Examination of the placenta"[32 minutes]. Finally immediate care of newborn procedure [40 minutes]. These videos guided by the Practical Skills' Project approved by the Ministry of Higher Education and scientific research (MOHE) and SCU. To apply the role modeling teaching method, the videos of the previous practical skills filming in the real environment in the hospital which the students attend their clinical area after taking all the required permission, to help the students to be familiar with the environment of labor area before starting the clinic. As well as the person who practices the procedures in the video were the researchers. In addition we use in these videos the reality laboring women from our community in the pre-mentioned hospital after take their acceptance in all the pre-mentioned procedures to help the students recognize on the laboring women behavior

during the delivery, except the management of 2nd stage of labor, in this part we use part of video from the internet for the women privacy as well as the researchers keep the women privacy during all the videos. The validity of the videos was performed by a jury, consisting of three professors' expert in this specialty.

Implementation phase:

- All of the students in both groups received a theoretical part, which covering labor area skills according to the timetable course of the department.

- The researchers divided the students either in control or study group into 8 subgroups in the lab (each group included 15 students).

- At the first of each procedure either in control or study group, the researchers used a PowerPoint presentation to explain the aim, equipment, and requirements of the pre-mentioned procedures for the students.

- The students' practices in both groups were recorded and used for debriefing and evaluation.

a. Control / Traditional Group:

- All students in the first semester were enrolled as a control group (Traditional lab).

- After the PowerPoint session which gave the students overview about the procedures as we mentioned before, the researcher displayed the procedures on low fidelity mannequin in the laboratory according to a pre-designed schedule for lab rotation in the department,

- Then, each student practicing the procedure on the low fidelity mannequin in the laboratory and the correction was done by the supervisors.

b. Study group / Role modeling:

- All students in the second semester were enrolled as a study group (Role modeling).

- At the first, the researchers discuss with the students the objectives and benefit of the new teaching strategy on the students and their performance.

- After the PowerPoint session, which gave the students an overview about the procedures as we mentioned before, the researcher displayed the practical video (role modeling) of the pre-mentioned procedures according to the schedule and lab rotation. Each video displayed two times. During watching the videos (role modeling) the researcher discuss anything vague with the students. In this method, the researcher was there just to supervise and control the students as allow them to take an active part in their learning.

- The following are the time movies;

1. Management of 1st stage of labor (50 minutes),

2. Management of 2nd stage of labor (40 minutes),

3. Management of 3rd stage of labor (32 minutes) ,

4. Immediate care of newborn (40 minutes),

- The researchers allowed the students 15-minute debriefing session providing immediate feedback to the students on their knowledge, skill performance, and clinical reasoning. The debriefing session aimed to answer questions, clarify concerns

- Then, each student individually performed a demonstration in the laboratory by using the low fidelity mannequin and the correction was done by the supervisor.

- Finally, the videos were given to the students in the study group for their usage at home, which doesn't need any internet access to watch it again especially before attained the clinical area.

Evaluation phase:

This phase achieved in the clinical area for both groups, after the students performed the pre-mentioned procedures. In this phase, the researcher assessed the anxiety score by using (tool II) State-Trait Anxiety Inventory; also assessed the confidence level by using (tool III) Confidence scale, as well as collected the performance score of practical skills for all students in both groups by using (tool IV) practical achievement assessment tool (Observation Checklist). Finally, the researcher assessed the students' attitude toward teaching methods used by (tool V) Attitude assessment tool "Likert scale": The collected data was used and analyzed for each group, and then compared between the two groups in the clinical area by using appropriate statistical analysis.

Statistical analysis:

Data entry and statistical analysis were done using the Statistical Package for Social Science (SPSS) version 20 statistical software package. Results were presented in frequencies and percentages. Independent–samples t-test analysis and chi-square test were used to test the statistical significance of some variables and to test the effectiveness of the intervention between the two groups. Statistical significance was considered at $p < 0.05$.

3. RESULTS

Table (1) General Characteristics of the studied samples

General Characteristics		Role modeling (Study group) N= 120		Traditional lab (Control group) N=120		t	P- Value
Age In Years (Mean ±SD)		20.1 ± 0.56		20.5 ± 0.61		0.72	0.752
		N(%)				X^2	P- Value
Gender	Female	78	65.0	84	70.0	0.07	0.756
	Male	42	35.0	36	30.0		
Previous education	Secondary School	92	76.7	98	81.7	0.55	0.231
	Technical nursing school	28	23.3	22	18.3		
Past experience With delivery	Yes	32	26.7	26	21.7	0.69	0.08
	No	88	73.3	94	78.3		

* Significant < 0.05, **P< 0.01 highly significant.

Table (1) represents the general characteristics of students in the studied groups, the table indicates that the mean age of students in the study and control groups were 20.1 ± 0.56 and 20.5 ± 0.61 respectively. The percentage of students having Secondary School represented 81.7% in the control group compared to 76.7 % in the study group. In addition, the students having past experience with delivery represented 21.7 % in the control group and 26.7 % in the study group. There were no statistically significant differences between both groups regarding their general characteristics, which reflecting homogeneity between both groups, this matching is useful in limiting extraneous variables, which could interfere with the effect of the intended intervention.

Table (2) Comparison between students' performance scores in role modeling and traditional group

Score Items	Role modeling (Study group) N=120	Traditional lab (Control group) N=120	X^2/ p-value
	N (%)		
Management of 1st stage of labor			X^2=8.71
Unsatisfactory	8(6.7)	18(15)	
Incomplete satisfactory	7(5.8)	20(16.7)	P= 0.001**

Complete satisfactory	105(87.5)	82(68.3)	
Management of 2nd stage of labor			X^2=6.58
Unsatisfactory	12(10)	27(22.5)	
Incomplete satisfactory	10(8.3)	14(11.7)	P= 0.001**
Complete satisfactory	98(81.7)	79(65.8)	
Management of 3rd stage of labor			X^2 =7.30
Unsatisfactory	2(1.7)	6(5)	
Incomplete satisfactory	4(3.3)	12(10)	P= 0.03*
Complete satisfactory	114(95)	102(85)	
Immediate care of newborn			X^2 =9.49
Unsatisfactory	6(5)	20(16.6)	
Incomplete satisfactory	14(11.7)	11(9.2)	P= 0.000**
Complete satisfactory	100(83.3)	89(74.2)	

*Significant at P < 0.05, ** Highly significant at P< 0.001

Table (2) elaborates that a highly statistically significant difference was found regarding the performance scores among the studied groups related to management of 1st stage of labor, management of 2nd stage of labor and immediate care of the newborn. On the other hand, there was a statistically significant difference between the two groups regarding the performance scores of management of 3rd stage of labor. It means the students whose taught the practical skills of labor area by role modeling have complete satisfactory performance scores more than students whose taught by the traditional method.

Table (3) Comparison between students' anxiety scores in role modeling and traditional group

Anxiety scores related to labor procedures	Role modeling (Study group) N = 120	Traditional Lab (control group) N=120	T	P
At management of 1st stage of labor	40.25±11.29	48.46±8.92	9.80	< 0.05*
At management of 2nd stage of labor	37.25±5.21	45.13±6.55	12.91	< 0.05*
At management of 3rd stage of labor	36.24±6.21	39.54±4.96	7.52	< 0.05*
At immediate care of newborn	38.65±8.21	44.58±8.34	9.35	< 0.05*

*Significant at P < 0.05, ** Highly significant at P< 0.001

Table (3) clarifies the mean anxiety scores of the nursing students during performing specified maternity nursing procedures in the labor area. It was observed that the mean scores of anxiety related to all labor procedures were high among the nursing students who taught by the traditional method. For example, the anxiety scores of the nursing students related to management 1st stage of labor were (40.25±11.29 & 48.46±8.92) in the study and control group respectively. In addition, there were statistically significant differences between the two groups regarding the anxiety scores in all the specified maternity nursing procedures.

Table (4) Comparison between students' self-confidence scores in role modeling and traditional group

Variables	Role modeling (Study group) N = 120	Traditional Lab (Control group) N=120	X^2	P
	N (%)			
Management of 1st stage of labor				
High confident	80(66.7)	41(34.2)	2.54	0.014*
Moderate confident	18(15)	37(30.8)	2.77	0.005*
Low confident	22(18.3)	42(35)	9.24	0.002*

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Total confidence score (M±SD)	42.61±9.45	36.58±6.25	T=8.01	< 0.05*
Management of 2nd stage of labor				
High confident	69(57.5)	39(32.5)	3.78	0.001**
Moderate confident	26(21.7)	28(23.3)	7.25	0.007*
Low confident	25(20.8)	53(44.2)	10.14	0.004*
Total confidence score (M±SD)	37.41±5.01	32.17±1.03	T=5.45	< 0.05*
Management of 3rd stage of labor				
High confident	90(75)	62(51.7)	8.24	0.008*
Moderate confident	28(23.3)	35(29.2)	6.78	0.005*
Low confident	2(10)	23(19.2)	7.89	0.005*
Total confidence score (M±SD)	43.87±2.05	39.01±5.69	T=5.01	< 0.05*
Immediate care of newborn				
High confident	82(68.3)	57(47.5)	3.58	0,015*
Moderate confident	20(16.7)	23(19.2)	5.25	0.012*
Low confident	18(15)	40(33.3)	4.25	0.003*
Total confidence score(M±SD)	39.87±3.02	34.12±3.02	T=3.25	< 0.05*

*Significant at P < 0.05, ** Highly significant at P< 0.001

Table (4). Considering the self-confidence scores for the studied samples, the results reported significant differences between the study and control group. The students whom taught by the role modeling strategy have high confidence scores more than the control group whom taught by the traditional method regarding all the procedures performed in the labor area (Management 1st stage of labor, management of 2nd stage of labor, management of the 3rd stage of labor and immediate care of the newborn. As well as the results represented a significant difference between the two groups regarding the total mean scores of the confidence level in each procedure, and it was higher among the study group more than the control group.

Table (5) Correlation between scores of confidence, anxiety and clinical performance among the studied groups

Variables		**Confidence Score**	**Anxiety score**	**Clinical Performance score**
Confidence Score	**Pearson Correlation** **Sig. (2-tailed)**	1	-0.784 0.002*	0.845 0.000**
Anxiety score	**Pearson Correlation** **Sig. (2-tailed)**	-0.954 0.008*	1	-0.741 0.005*
Clinical performance score	**Pearson Correlation** **Sig. (2-tailed)**	0.847 0.001**	-0.787 0.000**	1

* Significant < 0.05, **P< 0.01 Highly significant.

According to the Kolmogorov-Smirnov test, data distribution was normal for Confidence Scores, Anxiety scores, and Clinical performance scores, thus it was possible to perform the Pearson Correlation test amongst these variables. During the analysis of correlations (Table 5), the following correlations were obtained: confidence score/Anxiety score (r=0.784/p<0.001); Anxiety score/Clinical performance score (r = - 0.741/p=0.005), Clinical performance score /Anxiety score (r = - 0.787/p<0.001), the correlations showed themselves strong negative that is, the higher the anxiety level, the lower the confidence and performance levels found. In addition, there were strong positive correlations were obtained; Clinical performance score/confidence level (r = 0.845/p<0.001), confidence level/Clinical performance score (r =-0.847/p<0.001), that is, the higher the confidence level, the greater performance levels found.
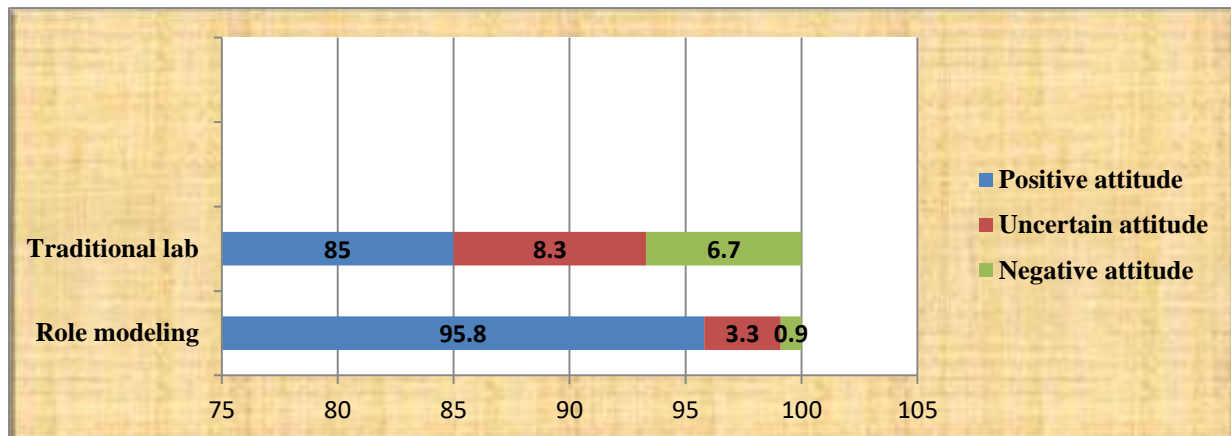
Figure 1: Attitude of both groups regarding teaching methods used.

Figure 1: illustrates the attitude of both groups regarding the teaching methods used. It shows that 95.8% of the studies group had a positive attitude regarding the role modeling, while 85% of the control group had a positive attitude regarding the traditional method. Meanwhile, the control group represented a negative attitude regarding the traditional method more than the study group (6.7% & 0.9 % respectively).

4. DISCUSSION

Clinical experiences prepare nursing students to transition into the professional nurse role as they integrate theoretical learning from the classroom into practice. When student nurses have increased levels of anxiety, and low self-confidence there is a direct threat to success in a clinical rotation. It is crucial for nursing faculty to understand their students' anxiety in order to foster supportive learning environments and to develop interventions to assist in decreasing students' high levels of anxiety. As student nurses are directly caring for patients, increased anxiety levels also pose a threat to patient safety and quality of care. [25] The current study is a comparative quasi-experimental posttest design carried out in order to evaluate the effect of role modeling as a teaching method on maternity nursing students' achievement, self-confidence, and anxiety in the labor area. The Discussion of the present study is divided into main three parts, the first part is concerned with the findings of general characteristics for the studied sample, and the second part is concerned with the findings of students' performance, anxiety level and confidence level. Finally, the third part is concerned with the findings of the correlation between scores of confidence, anxiety and clinical performance of the studied groups.

Regarding the general characteristics of the study sample, they were approximately similar regarding the mean age of the students, gender, and past experience with delivery as well as the previous educational certificate with no statistically significant difference between the two groups. This similarity is highly valuable as it assisted the researchers in diminishing the effect of the extraneous variables that could contaminate the results of the dependent variable. These findings matched those of *Mohamed and Metwally, 2016, [26]* who conducted a research about the Sim-Lab versus traditional lab training on maternity nursing students' satisfaction & self-confidence, clarified that there was no statistically significant difference recognized between the study and control groups regarding the sociodemographic data.

Concerning the performance scores of the studied groups in the clinical area. The current study elaborates that a highly statistically significant difference was found regarding the performance scores among the studied groups related to management of 1st stage of labor, management of 2nd stage of labor and immediate care of the newborn. In addition, there was a statistically significant difference between the two groups regarding the performance scores of management of 3rd stage of labor. It means the students whose taught the practical skills of labor area by role modeling have complete satisfactory performance scores in the clinical area more than students whose taught by the traditional method. This may be due to the role modeling in this study using video with clear and simple demonstration developed in a real hospital setting with real Egyptian women, which increase the learning goal and the retention among the students through imitation. Also, this may be due to using role modeling environment stimulates visual, auditory, and tangible learning methods and elicits different compared with the superficial responses obtained from traditional lectures.

The previous finding was similar to those of **Nouri et al.,(2014),[18]** who compared the effect of role modeling and traditional method on graduating baccalaureate nursing students regarding to the preparation for clinical practice, clinical functioning, knowledge, and satisfaction with their education, and they found that students taught by role modeling were rated more highly in the clinical performance than those of the other group. Similarly, **Nelms et al.,(2014), [27]** highlighted that role modeling has various effects on students' academic achievement and satisfaction with the course. Students' satisfaction is one of the key factors in the learning process**.** The development of students' satisfaction toward science can motivate student interest in science education and science-related careers. Additionally, **Wiseman, (2013). [28]** stated that the role modeling was more effective than the other methods of increasing students' achievement and their interests in science lessons especially the practice part.

The current study clarifies that, the mean scores of the anxiety of the maternity nursing students during performing specified maternity nursing procedures in the labor area. It was observed that the mean scores of anxiety related to all procedures were high among the nursing students who taught by the traditional method. As the anxiety scores of the nursing students related to management of 1st stage of labor was (40.25±11.29 & 48.46±8.92) in the study and control group respectively. In addition, there was a statistically significant difference between the two groups regarding the anxiety scores in all the specified maternity nursing procedures. This may be due to through the role modeling, the maternity nursing students took an overview and background about the reality clinical area which will face, as well as knew actual how can deal with the reality laboring woman and which care she needs and how to do it. Moreover, took an overview of women behavior during the specified maternity procedures. In addition, they were able to view and review the video before entering the clinical area and before doing the procedure.

The previous results were congruent with **White, (2014)[11]** who collected data from a convenience sample of 70 junior level students "bachelor of nursing science" in their fundamentals and health assessment courses. The students were randomly assigned to either treatment or control groups. The treatment groups participated in role modeling prior to their actual clinical experience, and the control groups participated in the traditional method of teaching before their actual clinical experience. Results indicated significant (p = 0.01) differences in levels of anxiety between the groups. "The self-reported anxiety scores of students who experienced the role modeling were significantly lower than the self-reported anxiety scores of students who experience the traditional method of teaching practical skills. The findings demonstrated the value of a role modeling experience to reduce anxiety levels of junior level students.

A mixed method, quasi-experimental study was conducted by **Fassetta, (2011)[29]** to evaluate the effect of role modeling orientation utilizing real patients, in the same line with the current research result. Fifty out of 57 novice bachelor of science in nursing students consented to include their data for analysis. The using role modeling method of teaching in orientation replaced the traditional laboratory/check-off process. The role modeling provided a safe, non-threatening environment for students to practice basic skills. Results found that students demonstrated decreased anxiety, increased knowledge, and increased self-confidence in their ability to perform expected clinical behaviors. Findings also demonstrated support for the inverse relationship between anxiety and self-confidence.

Self-confidence is based on an individual's self-esteem, sense of self, sense of efficacy, and experiences related to the setting. **[26]** Considering the self-confidence score for the studied sample, the results reported significant differences between the study and control group. The students whom taught by the role modeling strategy have high confidence scores more than the control group whom taught by the traditional method regarding all the procedures performed in the labor area (Management 1st stage of labor, management of 2nd stage of labor, management of the 3rd stage of labor and immediate care of the newborn). As well as the results represented a significant difference between the two groups regarding the total mean score of the confidence level in each procedure, and it was higher among the study group more than the control group. This may be due to, through role modeling method the student took an overview about the real environment and manpower in the real clinical setting as well as laboring women, which lead to decrease the panic and anxiety provoked from the new setting and the tension from the labor area. Also, this may result from the presence of educator allowing students to ask any question and increase clarification about the setting and procedure after watching the videos from the real environment and providing immediate feedback and instructions ranging from the simple to the complex, which is deficit in the traditional learning experience using demonstration and lecture through slides and images.

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The previous studies in agreement with many researchers. Many studies have supported the use of role modeling as a teaching method for building self-confidence in nursing students in the clinical setting. *Nouri et al., (2014)[18]* confirmed positive results for nursing students' self-confidence when investigating the effectiveness of role modeling as a teaching method experience for learning. In a study by *Nelms et al.,(2014), [27],* used role modeling as a teaching method self-efficacy surveys that showed an increase in students' abilities to assess their patients. After using high fidelity simulation and role modeling as a teaching method, "Students reported an increase in self-confidence because of the overall experience" *(Rush., et al(2012) [17].* Many variations of role modeling technology have assisted students in building their self-confidence. Also, *Nouri et al., (2014)[18]* who conducted qualitative studied titled with "experiences of role model instructors and nursing students about facilitator factors of role-modeling process'' the finding proof that, The treatment group who taught by the role modeling achieved significant growth related to the self-confidence scores but the control group did not. Meanwhile, the previous result disagrees with *Aronson., et al,(2013) [14],* he concluded that there were no significant differences in self-confidence between the experimental group who taught by role modeling and control group who taught by the traditional method.

Regarding the correlation between the level of confidence, anxiety and clinical performance among the studied groups. The current study revealed that there was a highly statistically significant difference between the confidence level and anxiety score (r = (-)0.784/p=0.000) with negative correlation by the arithmetic mean when the anxiety level increases accompanied by a decrease in the confidence level. On the other hand, the current research revealed that there was a statistically significant difference between the anxiety level and clinical performance score (r=(-)0.741/p=0.005), with negative correlation, by the arithmetic mean when the anxiety level increases accompanied by a decrease in the clinical performance. In addition, there were strong positive correlations were obtained; Clinical performance/confidence level (r=0.845/p=0.000), confidence level/Clinical performance (r=-0.847/p=0.001), that is, the higher the confidence level, the greater performance levels found. This may be due to when the student didn't afraid of the new clinical setting because they took an overview of it from the filming video, which conducted through the role modeling, that can leaded to increase their confidence which gave them time for attention in the task/procedure which leads to decrease the errors.

The current study finding was in agreement with *Horsley, [2012],[12]* who concluded a correlation to explore the direction and strength of the relationship between the level of state-anxiety, self-confidence, and clinical performance of the nursing students in the experimental group (Group A). There continued to be partial correlations among the three variables. The researcher found a minimal change in the correlation of the three variables when trait-anxiety was controlled. There was an extremely partial correlation between state-anxiety and self-confidence while controlling for trait-anxiety. There was a partial correlation between state-anxiety and clinical performance while controlling for trait-anxiety. The researcher found a negative partial correlation between self-confidence and clinical performance while controlling for trait-anxiety.

In relation to the attitude of students in both groups regarding teaching methods used. The current results pointed to, the majority of the students who taught by role modeling exhibited a positive attitude regarding role modeling, while more than two third of the students who taught by traditional method exhibited positive attitude regarding traditional method. Meanwhile, the control group represented a negative attitude regarding the traditional method more than the study group (6.7% & 0.9% respectively).

The aforementioned findings were supported by *Rush et al., (2012)[17]* who found out that, students enrolled in the role modeling through the practical course were more satisfied with their experience than those enrolled in the traditional course. While the current result contradicts with *Yuan et al., (2012) [30]* who compared between the satisfaction of the students taught by role modeling method and satisfaction of those taught by traditional method revealed that the participants were equally satisfied with both training methods.

5. CONCLUSION

Based on the findings of the present study, the following conclusion could be deduced: teaching the practical skills by the role modeling method improved the maternity nursing students' achievement, self-confidence as well as help to reduce the anxiety level among the students more than the traditional method. Students in the study group had a positive attitude regarding the use of role modeling teaching strategy more than those in the control group.

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6. RECOMMENDATIONS

Based on the study findings, the following recommendations were suggested:

- Integrate the role modeling method in all nursing clinical practice courses.

- Further researches are needed to:

o Evaluate the effect of role modeling versus other types of clinical teaching methods on student competency, self-confidence, and anxiety.

o Assessing the factors affecting maternity nurse students' anxiety, self-confidence and achievement.

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