

Effect of Simulation on Students' Achievement in Normal Labor Modules

Noha H. AbdElfattah , Galal A. EL-Kholy, Amal A. Hassan Omran, Hanan E. Hassan

Abstract: Simulation is a potentially powerful teaching approach that engages nursing students and requires them to use critical thinking and clinical reasoning, and provides an opportunity for reflective learning and integration of the student's knowledge. **Purpose:** evaluate the effect of simulation on students' achievement in labor modules. **Design:** A Quasi experimental study (study and control) **Setting:** This study was conducted at maternity nursing lab and lecture class in the Faculty of Nursing at Benha University. **Sample:** A convenient samples of 60 students' were received simulation based teaching and 60 students were included in the control group. **Instruments:** The of data collection were Self-administered questionnaire sheet, Observational checklist, Students' satisfaction with learning method and Media for the module of labor (Noelle mannequin& videos). **Result:** There was a highly statistical difference regarding students' practical skills during process of labor including perineal care, abdominal examination, vaginal examination, handling, assessment of fundus, placental examination and newborn physical assessment of both phase of assessment. **Conclusion:** Simulated delivery room classes were an effective training approach; they were equipped the students with practices that result in a significantly higher practical achievements and higher satisfaction scores compared to the conventional training. **Recommendations:** The study recommended that Maternity nursing students 'should be provided by variety of simulation-based education on maternity nursing skills to increase level of performance, satisfaction, and self-confidence.

Key words: *Simulation; Achievement satisfaction.*

INTRODUCTION

Traditional pedagogical techniques are still very much the norm within higher education. Student learning remains largely based upon extracting knowledge from texts and lectures. This style of teaching rarely gives students the opportunity to apply their newfound knowledge to actual situations,

resulting in a serious time lag between students learning and applying new knowledge so, it attributed to simulations relates to the suggested improvements in overall student learning. For much of the literature has stressed the increased levels of cognitive learning, it have the power to

recreate complex, dynamic political Processes in the lecture, allowing students to examine the motivations, behavioral Constraints, resources and interactions among institutional actors (*Raymond 2010*). Simulation is a potentially powerful teaching approach that engages nursing students and requires them to use critical thinking and clinical reasoning, and provides an opportunity for reflective learning and integration of the student's knowledge (*Peisachovich, Gal, & Johnson, 2016*). Simulation is an educational strategy that can be used to support the process of clinical education. It can help in improving students' self-esteem through provide an opportunity to practice in a risk-free environment. Simulation is the imitation of the operation of a real-world process or system over time (*Montagna & Omicini, 2016*).

Simulation use continues to expand in nursing education, specifically at the undergraduate level. Graduate nursing students can also benefit from simulation activities. Graduate nurse educator students' exposure to clinical teaching issues may be limited; therefore, simulation provides a

realistic, safe environment for students to practice the development of the teacher role. This manuscript provides ideas for planning, implementation, and suggestions for simulation technology use in the training of nurse educators for their role in clinical teaching (*Shellenbarger, T., & Edwards, 2012*).

HYPOTHESIS:

Students' who received simulation based teaching (study group) will have higher level of knowledge and practices than students who receive routine academic (control group) post **intervention**.

PURPOSE

The purpose of the study is to evaluate the effect of simulation on students' achievement in normal labor modules.

METHODE

Research design: A Quasi experimental (Study and control), was used

Setting: This study was conducted at Maternity Nursing Laboratory and classroom in the Faculty of Nursing Benha University.

Sampling: A convenient sample composed of 120 students' were included All available third year 2nd semester nursing students' at the obstetrics

and gynecology department were recruited in this study during the academic year (2016-2017), A convenience sample of (120) nursing students was divided into equal groups, study and control group(60 students per each group), applying two clinical teaching methods. Using the traditional method for half of students (60) as a control group, while using simulation (Noelle mannequin & videos) for another half of students (60) as a study group.

INSTRUMENTS

The study tools which had been used for data collection was divided into four tools which included the following:

Instrument one knowledge of students' structured interview questionnaire

This instrument contains two parts:-

- **Part one:** It was concerned with demographic characteristic as name, age, occupation and educational level).
- **Part two:** knowledge of student regarding normal labor. It contain knowledge about, definition of labor, difference between true and false labor pain, premonitory sign and

symptoms of labor, characteristic of uterine contraction, definition of first stage of labor, components of labor, diagnosis of labor, stages of labor, definition of partogram, mention value of partogram, definition of second stage of labor, sign of second stage of labor, duration of second stage of labor, mechanism of delivery, definition of third stage, sign of placenta separation, mechanism of placental separation and definition of fourth stage of labor.

Scoring system

- Adequate knowledge --- $\geq 75\%$.
- Inadequate knowledge ---- $< 75\%$.

Instrument two students' practice observational checklist.

It was developed by the researcher to assess students' practices immediately, after and at the end of labor. It contain the procedures that were done for the women such as. Perineal care, abdominal examination, vaginal examination, handling, assessments of fundus, Placental examination and newborn physical assessment.

Validity: The developed tool was reviewed for content validity by a jury consisting of a group of 5 experts specialized in the obstetric nursing field.

Reliability: The reliability of the tool were tested using Cronbach's Alpha test

Scoring system

- Highly satisfactory ----- <85%
- Satisfactory practice-----75-85%

Instrument three Students' satisfaction with learning methods structured interview questioner.

It was developed to assess student satisfaction with modules that included, The teaching methods used in this simulation were helpful and effective, The simulation provide student with a variety of learning materials and activities to allow learners to attain knowledge, skills in safe controlled environment, The teaching materials used in this simulation were motivating student to learn, The method of simulation was suitable to the way of learning, simulation covered critical content necessary for learning. Developing

the skills and obtaining the required knowledge to perform necessary tasks in a clinical setting. Help in understanding the concepts covered in the simulation.

Scoring system

- Satisfactory ----- >75%.
- Uncertain ----- 60-75%.
- Unsatisfactory----- <60%.

-Media for modules of labor(Noelle mannequin & Video

This tool used for training students about simulated videos about labor procedures Perineal care, abdominal examination, vaginal examination, handling, assessments of fundus, Placental examination and newborn physical assessment.

Ethical considerations:

- The aim of the study was explained to students' before data collection to gain their confidence and trust.
- An oral consent was obtained from each student to participate in the study they were informed that they could withdraw at any time when they need.
- The researcher assured maintaining anonymity and

confidentiality of each participant.

- They were assured that the study was not having any physical, social or psychological risk.
- Written approval was obtained from the dean faculty of nursing and Head of maternal and newborn health nursing department Benha University, to explain the purpose of the study.

This design included the preparatory phase, pilot study, the actual field work (implementation and evaluation phases), and associated limitation.

Pilot study:

A pilot study was carried out on 10% of the total sample it included (12 students). It was done to assess the applicability, clarity and efficiency of the Instruments, estimate the time needed for data collection, and test the feasibility of conducting the study. No modification were done, students' who shared in the pilot study were included in sample.

Procedure:

1. A written approval was obtained from the dean of the Faculty of Nursing and Head of Maternity after explaining the purpose of

the study and methods of data collection

2. Data was collected from the study and control groups at the same time instruments one and two (an explanation was done for students about filling instruments one and two. After wards instrument were distributed, It took minutes to fill instruments).
3. Students' in the study and control groups received theoretical lecture about normal labor, including definition, terms, stages, sign & symptoms and mechanism of labor; sign and symptoms of placental separation; mechanism of placental delivery and care during 4th stage of labor in the same groups.
4. Students' in the study group were divided in to four equal groups. Each group contained 15 students.
5. Students in the control group were divided in to four equal groups. Each group contained 15 students.
6. Students in the study group were subject to stimulated delivery experience using Noelle doll simulator and videos (The Program implementation through

(7) sessions, (3) for theoretical session and (4) for practical session. the theoretical session about normal labor, including definition, terms, stages, sign & symptoms and mechanism of labor; sign and symptoms of placental separation; mechanism of placental delivery and care during 4th stage of labor) and each session implemented in (45) min through using learning material (lecture – group discussion). The practical session were concerned with (Abdominal examination, vaginal examination, perianal care, assessment of fundus, handling, placental examination, and newborn physical assessment) and also each session implemented in (45) minutes and conducted in the affiliated laboratory of this department including demonstration, videos and re-demonstration. Implementation phase for each group of study took about two weeks)

7. Students' in the control group received routine training in the laboratory (demonstration) by traditional mannequin and allowing

them to remonstration, programs were implemented as study group but without videos.

8. The researcher started the evaluation phase at the end of re-demonstration for all students in the study and control groups. Each student was evaluated 3time and the mean was taken. Observation done for each required procedure using instrument two.
9. Knowledge for each student was reassessed using instruments one.

4-Statistical design:

Data analysis was performed using IBM SPSS statistical software version 22. Mean and standard deviation were done for quantitative data frequency distribution was done; (t) test was used for qualitative data (X^2). A correlation coefficient (r) was used to evaluate the relationship between the study variable. A statistical significant difference was considered if p-value ≤ 0.05 and a highly statistical significant was considered when p-value ≤ 0.001 .

RESULT:

Table (1): Distribution of studied sample according their personal characteristics (N=120).

Personnel characteristics	Study group (N=60)		Control group (N=60)		Chi square Test	P value
	No	%	No	%		
Age in (years)					1.20	>0.05
20-21	26	43.3%	32	53.3%		
22-23	34	56.7%	28	46.7%		
Mean ±SD	(21.43 ± 1.98)		(21.04 ± 1.46)			
Educational level					0.135	>0.05
Secondary school	28	46.7%	26	43.3%		
Technical health institute & nursing institute	32	53.3%	34	56.7%		
Residence					0.040	>0.05
Rural	43	71.7%	42	70.0%		
Urban	17	28.3%	18	30.0%		

NB: ns p >0.05.

Table (2): Distribution of studied sample according their pre intervention knowledge about labor (N=120).

Item	Study group (N=60)				Control group (N=60)				x ²	P value
	Incorrect		Correct		Incorrect		Correct			
	No	%	No	%	No	%	No	%		
Definition of normal labor	54	90.0	6	10.0	49	81.7	11	18.3	1.71	>0.05
Factors affecting labor	45	75.0	15	25.0	41	68.3	19	31.7	0.657	>0.05
Differences between True and False Labor Pains	50	83.3	10	16.7	53	88.3	7	11.7	0.617	>0.05
Premonitory Symptoms and Signs of Labor	47	78.3	13	21.7	52	86.7	8	13.3	1.44	>0.05
Sure signs of labor	43	71.7	17	28.3	45	75.0	15	25.0	0.170	>0.05
Characteristic of uterine contraction	52	86.7	8	13.3	55	91.7	5	8.3	0.776	>0.05

NB: ns p >0.05 Cont'd)

Table (3): Distribution of studied sample according their pre intervention knowledge about labor (N=120).

Item	Study group (N=60)				Control group (N=60)				x ²	P value
	Incorrect		Correct		Incorrect		Correct			
	No	%	No	%	No	%	No	%		
Stages of normal labor	54	90.0	6	10.0	57	95.0	3	5.0	1.08	>0.05
Definition of first stage of labor	53	88.3	7	11.7	55	91.7	5	8.3	0.370	>0.05
Duration of first stage of labor	55	91.7	5	8.3	56	93.3	4	6.7	0.120	>0.05
Definition of second stage of labor	46	76.7	14	23.3	44	73.3	16	26.7	0.178	>0.05
Mechanism of second stage of labor	37	61.7	23	38.3	36	60.0	24	40.0	0.035	>0.05
Duration of the second stage	47	78.3	13	21.7	45	75.0	15	25.0	0.186	>0.05
Definition of third stage of labor	45	75.0	15	25.0	42	70.0	18	30.0	0.376	>0.05
Duration of third stage of labor	43	71.7	17	28.3	41	68.3	19	31.7	0.159	>0.05
Mechanism of the third stage of placental separation	52	86.7	8	13.3	46	76.7	14	23.3	2.00	>0.05
Signs of placental separation	54	90.0	6	10.0	52	86.7	8	13.3	0.323	>0.05
Mechanisms of placenta examination	42	70.0	18	30.0	46	76.7	14	23.3	0.682	>0.05

NB: ns p >0.05

Table (4): Distribution of studied sample according their pre intervention knowledge about practical skills of labor stages (N=120).

Item	Study group (N=60)				Control group (N=60)				x ²	P value
	Incorrect		Correct		Incorrect		Correct			
	No	%	No	%	No	%	No	%		
Aim of perineal care	52	86.7	8	13.3	51	85.0	9	15.0%	0.069	>0.05
Aim of vaginal examinations	43	71.7	17	28.3	45	75.0	15	25.0%	0.170	>0.05
Aim of abdominal examinations	43	71.7	17	28.3	42	70.0	18	30.0%	0.040	>0.05
Definition of the partogram	49	81.7	11	18.3	45	75.0	15	25.0%	0.786	>0.05

Effect of Simulation on Students' Achievement in Normal Labor Modules

Value of the partogram	45	75.0	15	25.0	40	66.7	20	33.3%	1.00	>0.05
Components of the partogram	43	71.7	17	28.3	40	66.7	20	33.3%	0.352	>0.05
Signs of fetal distress	44	73.3	16	26.7	46	76.7	14	23.3%	0.178	>0.05

P > 0.05

Table (5): Distribution of studied sample according their knowledge post intervention (N=120).

Knowledge	Post-intervention								Chi square test	P value
	Study group (N=60)				Control group (N=60)					
	Incorrect		Correct		Incorrect		Correct			
	No	%	No	%	No	%	No	%		
Definition of normal labor	14	23.3	47	78.3	46	76.7	13	21.7	36.31	<0.001**
Factors affecting labor	24	40.0	37	61.7	36	60.0	23	38.3	5.63	<0.05*
Differences between True and False Labor Pain	7	11.7	53	88.3	53	88.3	7	11.7	70.53	<0.001**
Premonitory Symptoms and Signs of Labor	10	16.7	50	83.3	50	83.3	10	16.7	53.33	<0.001**
Sure signs of labor	14	23.3	45	75.0	46	76.7	15	25.0	32.04	<0.001**
Characteristic of uterine contraction	5	8.3	55	91.7	55	91.7	5	8.3	83.33	<0.001**

P<0.001**

Table (6): Distribution of studied sample according their knowledge about practical skills of stages of labor at post intervention (N=120).

Knowledge	Study group (N=60)				Control group (N=60)				Chi square test	P value
	Incorrect		Correct		Incorrect		Correct			
	No	%	No	%	No	%	No	%		
	Aim of perinea care	0	0.0	38	63.3	60	100.0	22		
Aim of vaginal examination	7	11.7	43	71.7	53	88.3	17	28.3	44.43	<0.001**
Aim of abdominal examination	12	20.0	34	56.7	48	80.0	26	43.3	17.06	<0.001**
Definition of the partogram	2	3.3	42	70.0	58	96.7	18	30.0	57.41	<0.001**
Value of the partogram	2	3.3	38	63.3	58	96.7	22	36.7	48.60	<0.001**
Components of the partogram	5	8.3	35	58.3	55	91.7	25	41.7	33.75	<0.001**
Signs of fetal distress	0	0.0	45	75.0	60	100.0	15	25.0	72.00	<0.001**

P < 0.001**

Table (7): Distribution studied sample according their practical skills of stages of labor at pre &post intervention (N=120).

Time of evaluation	Study group				Control group				Chi square test	P value
	Adequate		Inadequate		Adequate		Inadequate			
	No	%	No	%	No	%	No	%		
Pre-intervention	8	13.3	52	86.7	10	16.7%	50	83.3	0.796	>0.05
Post-intervention	56	93.3	4	6.7	30	50.0%	30	50.0	27.74	<0.001**

P. >0.05

P<0.001**

Table (8): Distribution of mean score of studied sample practice regarding labor procedures immediately at the re demonstration phase (N=120).

Procedure	First trial		Independent t test	P value
	Study group (N=60)	Control group (N=60)		
	Mean ±SD	Mean ±SD		
Perineal care	25.1200±.57159	24.0417±1.20483	6.26	<0.001**
Abdominal examination	13.4478±2.12201	12.5733±.71376	3.02	<0.001**
Vaginal examination	28.2350±1.85059	27.6167±1.07501	2.23	<0.001**
Handling	17.9850±.65686	17.4250±.72384	4.43	<0.001**
Assessment of fundus	23.4850±.61142	22.3333±.62887	10.17	<0.001**
Placenta examination	14.5667±.94091	13.6250±.93711	5.49	<0.001**
Newborn physical assessment	18.6667±.42850	17.4917±.96766	8.60	<0.001**

P <0.001**

Table (9): Distribution of mean score of studied sample regarding average practice score about labor procedures of both phases of assessment (N=120).

Procedure	Average score of the two different trials		Independent t test	P value
	Study group (N=60)	Control group (N=60)		
	Mean ±SD	Mean ±SD		
Perineal care	25.1567±.54907	24.2125±1.17154	5.85	<0.001**
Abdominal examination	13.4903±2.11541	12.7517±.58149	2.60	<0.001**
Vaginal examination	28.4017±1.31204	27.7458±.87272	3.22	<0.001**
Handling	18.1117±.50727	17.4958±.70934	5.47	<0.001**

Effect of Simulation on Students' Achievement in Normal Labor Modules

Assessment of fundus	23.5425±.55722	22.3958±.63495	10.51	<0.001**
Placenta examination	14.7042±.75981	13.7250±.87781	6.53	<0.001**
Newborn physical assessment	18.7250±.33096	17.6250±.73430	10.57	<0.001**
Total practice score	142.1320±3.52868	135.9517±2.40333	11.21	<0.001**

P <0.001**

Table (10): Distribution of studied sample regarding satisfaction score about simulation method (N=60).

Satisfaction	Agree		Uncertain		Disagree	
	No	%	No	%	No	%
1. The teaching methods used in this simulation were helpful and effective	44	73.3	12	20.0	4	6.7
2. The simulation provide student with a variety of learning materials and activities to promote the learning curriculum	47	78.3	9	15.0	4	6.7
3. The teaching materials used in this simulation were motivating student to learn.	36	60.0	22	36.7	2	3.3
4. The method of simulation was suitable to the way of learning	39	65.0	16	26.7	5	8.3
5. Simulation covered critical content necessary for learning.	41	68.3	15	25.0	4	6.7
6. developing the skills and obtaining the required knowledge to perform necessary tasks in a clinical setting	41	68.3	13	21.7	6	10.0
7. Help in understanding the concepts covered in the simulation.	39	65.0	19	31.7	2	3.3

DISCUSSION

Nowadays simulation is taking an important place in training and education of healthcare professionals .Simulations have been shown to be an effective tool in traditional learning environments. Innovative advances in technology have introduced a variety of tools to enhance learning in higher education. Among these, simulations have been used to support a variation of cognitive learning styles, to facilitate higher-order thinking and problem

solving skills, and to augment differential, collaborative, and mastery learning (Guy et al , 2015)& (Koh et al., 2010).

Several factors drive the increase of using simulation in nursing and health professional education. Inadequate clinical placement opportunities. Patient safety issues, as simulation allow health care practitioners to acquire the skills and experience required to protect patient

safety (**Richardson & Claman, 2014**).

Simulation is a teaching and learning strategy that is increasingly used in nursing education to prepare students for the clinical workplace. Simulation is a practice that resembles reality. It has existed in nursing education in many forms and the first healthcare simulation manikins were introduced in the early 1960s (**Jeffries, 2007**). As science, technology and education have progressed; simulation has become a sophisticated and innovative learning and teaching approach encompassing a vast spectrum of educational modalities. These ranges from computer games, role plays and skills-based trainers to patient manikins or human patient simulation (**Edgecombe, et al, 2013**). The purpose of simulation is to achieve specific goals related to learning or evaluation. Simulation does not replace the need for learning in the clinical practice setting, but allows the student to develop their assessment, critical thinking and decision-making skills in a safe and supportive environment (**Valler-Jones et al., 2011**). This also allows for the assessment and evaluation of the student performance, whereby if the student demonstrates a mistake,

inaccurate assessment. or slow clinical decision making, the student has the opportunity to learn from the experience. The primary aim of simulation is to help the student nurse. Achieve competence, linking their theoretical knowledge with clinical practice (**Ricketts, 2011**).

Simulation is an innovative and technologically advanced teaching and learning approach that combines a problem-based approach with experiential learning. The student learns through 'doing' and 'experiencing', utilizing their knowledge base, psychomotor skills and clinical decision making based on the information before them. (**Kim, et al, 2016**).

The present study is significantly supported through research hypothesis, which directing our attention to stress the importance and utilization of simulation in the education for improvement students' achievement and performance regarding labor process and enhancement of the students' clinical skills. The aim of this work is to study effect of simulation on students' achievement in normal labor modules.

The discussion of the current study was categorized in to three sections: characteristics, knowledge and satisfaction of the study sample regarding simulation methods.

Regarding characteristic of the students, the findings of the present study revealed that nursing students for both groups were in age ranged from 20:23 years with mean age (21.43±1.98) (21.04±1.46) this finding is an accordance with **Oh,(2015)** who conducted a study to determine the effects of simulation based training in the learning outcome of nursing students and founded that the mean age was 21.44years old; more than half 65.27% of the students were aged 21years old.

There was no statistically significant difference between study and control group regarding their knowledge about labor lecture contents pre intervention as definition of normal labor, difference between true and false labor pain, premonitory symptoms, stages of labor, mechanism of labor and signs of labor and characteristic of uterine contractions. This finding was supported with **Saied, (2017)** who conducted a study to "evaluate the effect of using a simulation based

scenarios on the pediatric nursing students" and reported that there was a significant difference between the pretest and posttest knowledge scores.

This may be due to lack of knowledge related to labor because students' did not study this content in the previous curriculum.

Simulation is potential tools that help the nursing students to practice in a real environment. It's a teaching strategy that provides students with artificial representation of a complex real life for enabling them to learn in a safe environment. it offers the opportunity for students to improve the intended learning outcomes such as clinical skill performance, knowledge acquisition, clinical reasoning ability and student satisfaction(**Bezyack,2007**).

Regarding knowledge related to practical skills of stages of labor, the present study revealed that there was no statistically significant difference between study and control groups regarding the aim of abdominal, vagina and perineal care, definition, value and components of partogram in addition to signs of fetal stress. This finding is supported by **Podlinski, (2016)** who conducted a study to "evaluate Effect of

Simulation Training on Nursing Students' Content Exam Scores", and found that may limit the nursing student's ability to learn and develop the necessary skills.

This may be due to lack of knowledge about practical skills of labor modules.

The present study indicated that studied groups achieved highly statistical significant difference regarding their knowledge about labor lecture contents as definition of normal labor, difference between true and false labor pains, stages of labor, mechanism of labor and characteristic of uterine contractions.

This result was matched with **Omer, (2016)**, who conducted a study to "explore the perception of 117 nursing students on their satisfaction and self-confidence after clinical simulation experience", who reported Improvement of knowledge because methods used in simulation were effective and gave them clear ideas of what is expected from them. These knowledge acquisition abilities improve their self-confidence.

In addition this findings was congruent with **Agha , et al, (2015)**, who conducted a study to "evaluate medical students' satisfaction with simulation based

learning strategy", who indicated that there was high knowledge satisfaction with learning by the clinical simulation and that learner's confidence in their skills.

The current study revealed a highly statistical significant difference between study and control group regarding knowledge about practical skills during process of labor including aim of abdominal, vaginal examination, and perineal care, definitions, values and components of partogram and signs of fetal distress. This may be due to students of the simulation group had given a chance for demonstration and make a mistake and re-demonstration and correction of their mistakes that had led to gaining confidence of improving practical skills.

In this respect, **Pantelidis1, et al (2016)**, who conducted study for evaluate the general educational environment of the course, as well as the skills and knowledge acquired by the participants , who founded that Students improved their clinical knowledge and their ability to take action by diagnosing and intervening. As demonstrated by the pre- and post- MCQs tests, students performed better after the completion of the seminar.

The present study illustrated that the distribution of mean score of studied sample practice regarding labor procedures immediately at re-demonstration phase, had more a highly statistical significant difference regarding their practical skills during process of labor including perineal care, abdominal examination, vaginal examination, handling ,assessment of fundus, placenta examination and newborn physical assessment this may be due to improve student knowledge and retain information gained from lecturer and practical re-demonstration of the labor skill.

The current revealed that the distribution of mean score of studied sample practice regarding labor procedures post intervention, had a highly statistical significant difference regarding their practical skills during process of labor including perineal care, abdominal examination, vaginal examination, handling ,assessment of fundus, placenta examination and newborn physical assessment. This may be due to the students' performance level was increased by the application of integrated training (stimulation videos and Noelle doll).

This results supported by **Zarifcanaiey, et al, (2016)**, who conducted study to compare the effect of integrated training (simulation and critical thinking strategies) and the simulation based training on performance level at critical thinking ability of nursing students, who founded that the experimental group obtained higher performance score significantly difference than control group due to positive effect of using integrated methods on critical practice, problem solving skills, clinical efficacy, academic achievement, and clinical competence.

Regarding students satisfaction about simulation method, the result of this study showed that slightly more than three quarter of students of the studied sample agree with "the simulation provide student with a variety of learning materials and activities to promote the learning curriculum". While minority of them disagree with "help in understanding the concepts converted in the simulation. This may be attributed to the students in the simulation sessions take opportunity for performing procedures on mannequins in a simulation lab and seeing videos about labor procedures

(abdominal examination, vaginal examination, perineal care, placental examination, and newborn physical assessment).

Hall , (2013) supporting the present study finding, by evaluating the effect of simulation based education on baccalaureate nursing students' satisfaction and reporting that the students were very satisfied with the simulation learning activity.

The result of this study was congruent with **Mould, et al, (2011)**, who assess the effect of simulation on student satisfaction and confidence, who reported that a higher learner satisfaction with learning by clinical simulation and the learner confidence in their skills.

In addition to that **omer, (2016)**, who reported that using simulation as a strategy for clinical education promote student satisfaction with their learning and improve self-confidence. Simulations prepare the student to for real-life experience and speed the transition to professional career.

The current study emphasized that, utilized of simulation on students' achievement on labor modules as simulation training provides the nursing student with opportunities for active involvement in learning,

enables nursing students to gain new knowledge and build upon previous skill. Simulation training also provides self-paced learning and affords nursing students the opportunity to make mistakes and learn from them, which cannot be accomplished in the clinical setting. Moreover, simulation training can provide standardized learning experiences to all nursing students by enabling active experience. This guides our attention to utilize simulation for students in education.

CONCLUSION

Students who received simulation based teaching acquired higher level of knowledge and practice than students who received routine academic teaching.

RECOMMENDATION

Simulation based teaching should be integrated in the practice training for students before their contact with actual woman in the labor unit.

Research should be done to compare between simulation based teaching and other methods of teaching.

Reference

- Peisachovich, E., Gal, R., & Johnson, S. (2016): Experiences of undergraduate nursing students of standardized patient methodology in their transition

- to nursing practice in Ontario Canada. *Journal of Nursing Education and Practice*, 7(3), 1–9. doi:10.5430/jnep.v7n3p1
- Montagna,S., Omicini,A.(2016): Simulation & Multi-Agent Systems An Introduction Autonomous Systems Sistemi Autonomi, Universit_a di Bologna,10.
- Raymond, C, (2010): Do Role-Playing Simulations Generate Measureable and Meaningful Outcomes? A Simulation's Effect on Exam Scores and Teaching Evaluations, *International Studies Perspectives*, 11(1), pp.37-51.
- Shellenbarger, T., & Edwards, (2012): Clinical Simulation in Nursing 8(6), 249-255.
- Omer, T, (2016 Marzouk, T (2015): Effectiveness of simulated delivery room classes on practical achievement and satisfaction of maternity nursing students, *Woman's Health and Midwifery Nursing Department, Faculty of Nursing-Mansoura): Nursing Students' Perceptions of Satisfaction and Self-Confidence with Clinical Simulation Experience*, *Journal of Education and Practice*, 7 (5),131-136.
- Pantelidis1, P, Staikoglou1, N, Paparoidamis1, G, Drosos1, C, et al, (2016): Medical students' satisfaction with the Applied Basic Clinical Seminar with Scenarios for Students, a novel simulation-based learning method in Greece, *J Educ Eval Health Prof*, 13: 13, 5.
- Zarifcanaiey, N, Amini, M, & Saadat, F, (2016): A comparison of educational strategies for the acquisition of nursing students' performance and critical thinking, *BMC medical education*, 16, 294, 1-7.
- Agha S, Alhamrani A, Khan M. (2015): Satisfaction of Medical Students with Simulation based learning, *Saudi Medical Journal*, 36: 731-736.
- Saied, H. (2017): The Impact of Simulation on Pediatric Nursing Students' Knowledge, Self-efficacy, Satisfaction, and Confidence, 8, (11).
- Hall R, Rachel M., (2013): Effects of High Fidelity Simulation on Knowledge Acquisition, Self-Confidence, and Satisfaction with Baccalaureate Nursing Students Using the Solomon-Four Research Design. *Electronic Theses and Dissertations*.
- Mould, White,H., &Gallagher, R.,(2011):evaluation of critical care simulation series for undergraduate nursing students, *contemporary nurse*,38:180-190.
- Oh, H., (2015): effect of simulation based training on the learning outcome of nursing students'. *Advanced science and technology letters*.88:251-255.