Educational Program for Enhancing Maternity Nurse Students' Competence Standards Regarding Intrapartum Care

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Abstract

Background: Competency refers to one's ability to apply certain levels of Knowledge and skills to produce specific outcomes according to some pre-test standards. These standards are external criteria of best practice to which current performance can be compared. This study **aimed** to evaluate the effectiveness of educational program for enhancing of maternity nurse students' competence standard regarding Intrapartum care at Ain Shams University Hospital. A **quasi-experimental** research design was utilized (time-series one group). **A purposive Sample** of 70 female nurse students in the Faculty of Nursing at Ain shams University was included in this study. **Data were collected** through three tools (1) personal data assessment sheet, (2) Maternity Competency Standards Checklist, and (3) Knowledge assessment sheet. **Results:** There were significant differences ($p <.001$) between the pretest and posttest 1 in students' overall maternal competency in area of intrapartum care. Specifically, students' mean scores of overall maternal competency in this area have increased significantly in the posttests (1, 2, and 3) compared to the pretest. **Conclusion:** Implementing of an education program improved level of competence among nurse students in area of Intrapartum care. Students 'competences included both knowledge about the maternal competency standard, and performance (implementation) of maternal competency standard. **Recommendations**: maternal competency standards should be a part of the academic and professional preparation of students and the evaluation plan at the Faculty of Nursing.

Key words: Education program, maternal competency standards, maternity student, awareness .

Introduction

Clinical practice is a vital component of the nursing curriculum and has been acknowledged as being central to nursing education, Based on this general premise, there is agreement that nursing curriculum should be directed towards improvement of clinical competencies of nursing students., Competence in nursing practice is complex and involves cognitive and kinesthetic aspects. It involves action and demonstration of both the physical and cognitive skills used by nurses in the practice environment *(Nahas and Al-Nobani, 2013).*

A competency can be defined as the knowledge, skill, ability and judgment required for safe and ethical nursing practice, competencies are not tasks, but are behavioral actions that require the registered nurse to utilize a depth and breadth of knowledge, skill and judgment that allow them to safely practice and competently adapt to changes in the health care environment. The nurse is said to be competent when she has competence across all domains of competencies applicable to the nurse, at a standard that is judged to appropriate for the level of nurse being assessed *(Walker et al., 2010).*

The achievement of maternity competency standards is of first priority to ensure the delivery of a safe maternity care. The latest statistics published by the annual report of World Health Organization (WHO) highlights that maternal death worldwide has decreased by 56% since 2010. However, a total of 7000 women still die each year in Africa because of some preventable causes before, during, and after the time of giving birth. In North Africa, 2000 women die each year and 80% of these women were not suffering serious pregnancy or delivery problems. It was remarkable that the WHO annual report highlighted that nurses' professional skills were often held responsible for these deaths because 66% of nurses who handled these cases were not aware of maternity competency standards and that 54% of those nurses did not practice these competency standards in real life situations *(Ibrahim and Elshafie, 2016).*

A maternity nurse is a nursing professional who provides care to expectant mothers before, during and after childbirth. Most maternity nurses will focus on supporting women during the labor and delivery process – working at the patient's side to monitor both mother and baby, and to encourage, coach, educate and support. Others may care for women who are experiencing complications before birth or provide postpartum (after delivery) care, at the university level; the focus is on student's awareness of maternity competency standards. This includes both knowledge and practice of global maternity competency standards of practice in order to ensure that those students are able to deliver a safe maternity care when they graduate *(Stephenson et al., 2015).*

Intrapartum period over the world are at risk for an adverse outcome for the woman and her infant, it has been estimated that each year, complications from pregnancy and childbirth result in about 500,000 maternal deaths, 7 million women have serious long term problems, and 50 million women have health negative outcomes following delivery most of these occur in the developing world. These complications they can be minimized through effective, affordable, accessible and acceptable maternity care. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies.

Justification of the problem:

The largest health discrepancy in the world is maternal mortality with most deaths occurring around the labor, delivery and postpartum period. The latest statistics published by the **World Health Organization (WHO)** revealed that approximately 830 women die every day from preventable causes related to pregnancy and childbirth and that 99% of all maternal deaths occur in developing countries. The maternal mortality ratio in developing countries in 2015 is 239 per 100 000 live births versus 12 per 100 000 live births in developed countries, 25 percent them occurs during pregnancy. The presence of skilled qualified competent nurses, optimal student Learning for high quality maternity care is a leading factor in averting maternal death and disability., There is demands for the intern students to acquire and maintain a professional approach to action and a set of skills that enable them to practice as a competent and caring nurse clinician and consequently deliver a safe maternity care service according to global standards. So the purpose of this study was to evaluate the effectiveness of educational program for enhancing awareness of maternity nurse students' competence standard regarding intrapartum care at Ain Shams University hospital.

Aim of the Study

To evaluate the effectiveness of educational program for enhancing of maternity nurse students' competence standard regarding Intrapartum care at Ain Shams University hospital.

Aim of this study was achieved through:

❖ Implementing educational program about competences standards regarding Intrapartum period by using maternity competency standards.

❖ Evaluate the effect of education program on nurse students' level of competence.

Research hypothesis:

Implementing of an education program will enhance nurse students' level of competence regarding Intrapartum care.

Subject and Methods

A quasi experimental study was utilized to accomplish this study. It was conducted in the Obstetric and Genecology Department in the Obstetric and Genecology Hospital at Ain Shams University in delivery unit. A convience sample of 70 participants recruited from third -year nursing students at faculty of nursing Ain Shams University during the course entitled maternity & gynecological nursing at delivery unit at academic year 2017-2018 in the first term, All participants were assigned to one group because this was a quasi-experimental time-series one group, pre-test, post-test research design.

Tools and technique of data collection

Tool I. Personal data assessment sheet

The researcher constructed a questionnaire sheet after reviewing the related literature it was used to assess students 'personal data included age, residency, and past experience regarding competency training.

Tool II Maternity Competency Standards Checklist (MCSC) standard 2

The Maternity Competency Standard Checklist is a behavioral checklist that aims at measuring students' level of performance in real life maternity nursing situations according to four maternity competency standards MCSC has 110 items that are divided over four competency standards. The researcher used standard 2 to assess student level of competence regarding intrapartum care.

Standard 2: Normal labor, childbirth, and immediate newborn care:

This standard describes that students provide high quality, culturally sensitive care during labor, conduct a clean and safe birth and handle selected emergency situations to maximize the health of women and their newborns. It included 24 items.

❖ **Scoring system**

Each of the items on the MCSC is rated on a two-point frequency scale (i.e., 0 = No, 1 = Yes). A score of zero means that the behavior described by the statement was not observed by the researcher or wrong. A score of 1 means that the behavior described by the statement was observed by the researcher or correct. Scores of the standard can summed to obtain an overall total score that describes the maternity competency for a particular student. Sample data were collected and recorded as following:

Unsatisfactory < 50% Score (0-12)
Moderately satisfactory 50% to 74% Score (13- 17)

Satisfactory > 75 Score (18- 24)

Tool III Knowledge assessment sheet

This test was designed to measure nurse students knowledge of the information embedded within the standard2 of maternal competency regarding intrapartum care as described by the MCSC. The development of the Knowledge Test in the present study utilized two sources (a) workbooks that accompanied some textbooks on midwifery and maternity care, and (b) midterm and final exams of previous years conducted in the Faculty of Nursing at Ain Shams University.

This Knowledge Test contained 10 multiple choice questions regarding intrapartum care.

❖ **scoring system**

Knowledge questions were given a score zero (0) if the student answered the question incorrectly and a score of 1 if the student answered the question correctly. The scores of the correct answers of the questions for a test can be summed up to obtain a student's knowledge score of the standard. Total knowledge scores were categorized as:

Poor knowledge >50% (>10 score);
Average knowledge 50-70% (10>14);

Good knowledge ≤ 70% (14>16).

Pilot study

After preparation of the tools of data collection, they were pre-tested on 10% of the total study sample (7 students). The purpose was to test study process and to evaluate the applicability and clarity of the tools, assessment of feasibility of fieldwork, and detect any possible obstacles that might face the researcher and interfere with data collection. The pilot study also served to determine the time needed to complete the tools. The pilot groups of nurse students were excluded from total sample.

Fieldwork description (procedure):

An official written letter was obtained from the Dean of the Faculty of Nursing at Ain Shams University as an approval for data collection to conduct the study. The letter explained the study purposes and its main procedure; the data for the present study was carried out in the period of the first semester in the academic year 2017/2018 from beginning of October to the end of December. The students were recruited to participate in the study during their training course in the study setting (delivery room). The study was carried out through three following phases; assessment, implementation and evaluation

• **Assessment stage:**

❖ All students were firstly assessed for personal data and past clinical experience at classroom by personal data assessment sheet (tool 1). The time allowed to fill this part of questionnaire was 5-10 minutes

❖ Pre test was done to assess students' level of competence using tool2 and tool 3 of data collection, data collection for the pre-test continued for two weeks; from early to mid-October, 2017. The researcher administered two measurement tools as a pretest; **competence standard** in the MCSC and the **Knowledge assessment sheet**. The researcher visited the study setting 4 days a week from 9:00 AM to 2:00 PM to administer the measurement tools. For the MCSC, the researcher observed the students as they work in groups during their time of work at the study setting. The number of students in any group was above seven, but the researcher observed every student individually. It took by the researcher 10 minutes on average to fill in the MCSC for each student. All data collection of the MCSC occurred in the Obstetric and Genecology Hospital. The researcher then, administered the Knowledge for students, It took 10 minutes by students on average to answer the questions of the Knowledge test.

• **Implementation stage: it divided into 2 phases:**

Phase 1: Educational & training phase

In this phase the researcher conducted session of educational program for students regarding competences for intrapartum care, this phase continued for almost 3 weeks;. The educational phase consisted of 4 sessions: one introduction session, 2 sessions about maternity competency standard of intrapartum care, and one conclusion session. There was a training session for the standard run for two hours. The number of sessions held per week varied

depending on students' workload, the researcher applied the educational sessions in four groups during the training course at Ain Shams University Hospital. The total number of hours of session of educational program for each group was 8 hours (2 hours x 4 sessions).

- **Phase 2: Student Evaluation and follow-up phase:**

❖ **Practical skills evaluation:**

All students were evaluated for practical skills and level of performance regarding intrapartum care using standardized checklist from Maternity Competency Standards Checklist (MCSC) standard 2,The researcher administered to this post-test (Time 1) immediately after the end of an educational program. To capture possible changes in students' awareness of maternity competency over time, the researcher re-administered the same posttest to the same students over two points of time (Time 2 after 2 weeks and Time 3after one month separated (for follow up).

❖ **Student level of knowledge evaluation:**

After ending of practical evaluation, students were collected in classroom and the researcher administered the second tool to evaluate students' level of knowledge regarding intrapartum competency standard, It took 10 minutes by students on average to answer the questions of the Knowledge test. It took 10 minutes to be filled by students, the researcher re-administered the same posttest to the same students over two points of time (Time 2 pot test after 2 weeks and Time 3 after one month separated (for follow up).

Ethical consideration

The study was approved by pertinent research and ethics committees at the Faculty of Nursing in Ain Shams University. Permissions to conduct the study were obtained from pertinent authorities. The aim

of the study was explained to the participants, along with the benefits and any potential risks or discomforts. Oral consent was obtained from the students after the researcher explained the general aim of the study. Participation was volunteer and any student could deny participation at any time at no cost. Data was kept confidential and was used solely for research purposes.

Limitations of the study:

1. Small sample size (70 students) may limit the power of the data statistical analyses.

2. It was somewhat difficult and exhausted for the researcher to assess and evaluate each student alone using various methods of data collection.

Result:

Table (1): Distribution of the students according to their personal data

Table (1):shows that the mean age of all students was 22.5 and that the majority of students (58.6%) were in the age range of 22-23 years. Most of students (81.4%) were enrolled in the Faculty of Nursing with only (18.6%) enrolled in the Institute of Nursing. Slightly less than three quarters of the students (71.4%) didn't attend any training sessions on maternal competency. A total of 54.3% of the students lived in rural areas and 45.7% lived in urban areas

Table (2): shows that in the pre-test, (47.1%) of the students were classified at poor and average level represented (48.6%) in terms of their knowledge about intrapartum care. while In posttest there was a considerable increase in the percentage of average (62.8%) and good students (32.9%).The percentage of average students in posttest 2 (62.8%) was the same for posttest 1, but it decreased slightly in posttest 3 (64.2%).

Table (3):shows that there were significant differences (*p*<.001) between the pretest and posttest 1 in students' overall knowledge in the labor area; Specifically, students' mean scores of overall knowledge in this area have increased significantly in the posttest 1 compared to the pretest. In contrast, there were no significant differences between posttest 1 and posttest 2, posttest 2 and posttest 3 in students' overall knowledge in this area (*p*>.05).

Table (4):shows that in the pre-test, the majority of the students were classified at unsatisfactory (74.3%) level in terms of their performance in Intrapartum care. In posttest 1, there was a considerable increase in the percentage of moderate (81.4%). The percentage of unsatisfactory students decreased in posttest 2 (7.8%) but increased slightly posttest 3 (9.2%) compared in posttest 1.

Table (5):shows that there were significant differences (*p*<.001) between the pretest and posttest 1 in students' overall performance in the labor care

Table (6): shows that in the pre-test, (60%) of students were classified at the unsatisfactory level while little more than one third of the sample (37.14%) were classified at the moderate level in terms of their overall maternal competence in labor care.

Table (7):shows that there were significant differences (*p*<.001) between the pretest and posttest 1 in students' overall maternal competence in the labor care, Specifically, students' mean scores of overall maternal competence increased significantly in the posttest 1 compared to the pretest. In contrast, there were no significant differences (*p*>.05) between posttest 1 and posttest 2, posttest 2 and posttest 3 in students' overall maternal competence in the labor (*p*>.05).

Table (1): Distribution of the students according to their personal data (N=70).

Variables	No	%
1-Age		
< 22	14	20
22 - 23	41	58.6
> 23	15	21.4
X+SD	22.5 ± 0.9	
2-Qualifications:		
- Enrolled in Faculty of Nursing	57	81.4
- Enrolled in Institute of Nursing	13	18.6
3-Training sessions attended		
Yes	20	28.6
No	50	71.4
4-Residency:		
Rural	38	54.3
Urban	32	45.7

Table (2): Percentage distribution of the students according to their knowledge about Intrapartum care (Pretest, Posttest 1,Posttest 2, Posttest 3) (N=70).

Level of students' knowledge about labor care (score = 0-20)	No	%
Pretest		
Poor < 10 (<50%)	33	47.1
Average 10 - <14 (50-<70 %)	34	48.6
14– 16 (70 -80 %)	3	4.3
Posttest 1 immediate		
Poor < 10 (<50%)	3	4.3
Average 10 - <14 (50-<70 %)	44	62.8
14– 17 (70 -85 %)	23	32.9
Posttest 2		
Poor < 10 (<50%)	2	2.8
Average 10 - <14 (50-<70 %)	44	62.8
14– 17 (70 -85%)	24	34.4
Posttest 3		
Poor < 10 (<50%)	1	1.4
Average 10 - <14 (50-<70 %)	45	64.2
14– 19 (70 -95 %)	24	34.4

Table (3): Comparison of the nursing students according to the mean of their overall knowledge of the labor standard over four measures (pre, post 1,post 2, and post 3) (N=70).

Variables/ Measures	X±SD	t. test of Pretest vs. Posttest 1	t. test of Posttest 1 vs. Posttest 2	t. test of Posttest 2 vs. Posttest 3
Labor care				
Pretest	47±3.3	22.7 ($p<.001$)		
Posttest 1	65±2.5		1.10 ($p>.05$)	
Posttest 2	64.6±2.87			1.28 ($p>.05$)
Posttest 3	65±2.6			

Table (4): Percentage distribution of the Nursing students according to their performance in labor care over four measures (Pretest, Posttest 1,Posttest 2, Posttest 3) (N=70).

Level of students' performance in labor care (score=0-24)	No	%
Pretest		
Unsatisfactory < 50% Score (0-12)	52	74.3
Moderately satisfactory 50% to 74% Score (13-17)	18	25.7
Satisfactory > 75 Score (18-24)		
Posttest 1		
Unsatisfactory < 50% Score (0-12)	6	8.6
Moderately satisfactory 50% to 74% Score (13-17)	57	81.4
Satisfactory > 75 Score (18-24)	7	10.0
Posttest 2		
Unsatisfactory < 50% Score (0-12)	5	7.8
Moderately satisfactory 50% to 74% Score (13-17)	57	81.4
Satisfactory > 75 Score (18-24)	8	10.8
Posttest 3		
Unsatisfactory < 50% Score (0-12)	6	9.2
Moderately satisfactory 50% to 74% Score (13-17)	56	80
Satisfactory > 75 Score (18-24)	8	10.8

Table(5): Comparison of the students according to the mean of their overall performance in the labor standard (over four measures (pre, post 1,post 2, and post 3) (N=70).

Variables/ Measures	X±SD	t. test of Pretest vs.Posttest 1	t. test of Posttest 1 vs. Posttest 2	t. test of Posttest 2 vs. Posttest 3
Labor care				
Pretest	54.6 ±8.8	-		
Posttest 1	60.6±8.7	14.3 ($p<.001$)		
Posttest 2	60.9±8.4		1.10 ($p >.05$)	
Posttest 3	61.3±8.6			1.22 ($p >.05$)

Table (6): Percentage distribution of the nursing students according to their overall maternal competence in labor care over four measures (Pretest, Posttest 1,Posttest 2, Posttest 3) (*N*=70).

Level of students' overall maternal competence in labor care (score=0-44)	No	%
Pretest		
unsatisfactory < 22 (<50%)	42	60
Moderate 22 - <31.8 (50-<70 %)	26	37.14
satisfactory 31.8– 35.20 (70 -80 %)	2	2.86
Posttest 1		
unsatisfactory < 22 (<50%)	4	5.7
Moderate 22 - <31.8 (50-<70 %)	51	72.8
satisfactory 31.8– 35.20 (70 -80 %)	15	21.5
Posttest 2		
unsatisfactory < 22 (<50%)	3	4.2
Moderate 22 - <31.8 (50-<70 %)	51	72.8
satisfactory 31.8– 35.20 (70 -80 %)	16	22.8
Posttest 3		
unsatisfactory < 22 (<50%)	3	4.2
Moderate 22 - <31.8 (50-<70 %)	51	72.8
satisfactory 31.8– 35.20 (70 -80 %)	16	22.8

Table (7): Comparison of the nursing students according to the mean of their overall maternal competence in the labor standard (over four measures (pre, post 1,post 2, and post 3) (N=70).

Overall maternal competence	X±SD	t. test of Pretest vs.Posttest 1	t. test of Posttest 1 vs. Posttest 2	t. test of Posttest 2 vs. Posttest 3
Labor care				
Pretest	47.8 ±5.9	-		
Posttest 1	55.3±7.8	32.2 (*p*<.001)		
Posttest 2	54.8±7.5		1.36 (*p* >.05)	
Posttest 3	55.2±7.4			1.26 (*p* >.05)

Discussion

The presence of a high qualified competent nurse; a nurse who is well prepared to enhance health care service, is the corner stone for effective health care team. Since most of maternal deaths are preventable, the presence of a skilled, qualified, competent nurse can make the difference between life and death *(Chapman and O'Neill, 2010).* A competent nurse plays an important role in the positive experiences associated with maternity care and can independently manage the care of healthy newborns and mothers throughout the child bearing cycle. Thus, the development of clinical skills in nursing students during their clinical practice is critical because this can contribute towards their future professional and caring skills. Professional caring empowers patients and contributes to their well-being and health. Clinical training can enhance the capacity of nurses to be effective caring practitioners. *(Clark et al., 2016).*

In the light of the previous outline, the researcher conducted **this study to evaluate** the effectiveness of education program on nurse Students' level of competence regarding intrapartum period, using quasi experimental research time-series design based upon core maternity competency standards. Intern students do not maintain necessary competencies to deliver a safe maternity care.

Regarding socio demographic characteristics of the study sample, the current study revealed that intern students were almost divided equally between rural and urban areas. This finding emphasized the contextual diversity of the sample of the present study in a way that could support the generalization of the findings and consequently fostered the external validity of the intervention technique. The majority of them were enrolled in the bachelor level, this is an important characteristic of the sample because prior knowledge was found to facilitate the implementation of an education program as students appeared to be well-informed, cooperative, and interested, and almost three quarters of the students didn't attend any training sessions on maternal competence standards.

Similar to the current study findings *Chen et al. (2014)* conducted a study that aimed at developing nursing students and nurses' awareness of applying infection control procedures, reported that when participants were knowledgeable about the aims, content, and procedures of the intervention technique, they were more likely to be cooperative, supportive, helpful, and relaxing. These results confirmed the importance of familiarizing participants with the intervention technique or the training program.

Competent nursing care is the ability to carry out assigned responsibilities in ways that help the consumers of nursing care to solve their problems and meet their needs and expectations. To be able to fulfill their responsibilities of care to the patients and to meet patients' expectations, that is satisfying to the patients, several researchers suggested that knowledge, skills, attitudes, cognitive, psychomotor and affective attributes should be viewed as crucial components of competency *(Fernandez et al., 2012).*

The current study hypothesis was that implementing of an education program will enhance nursing students' level of competence regarding intrapartum care, this hypothesis is confirmed by these study findings that showed a positive effect of education program in enhancing students' level of competence concerning level of knowledge and performance within intrapartum care.

For the students to be competent, they should maintain a theoretical background related to the practical tasks that they are learned, so the teacher should use a teaching method that enhance student level of knowledge considering student needs and characteristics *(Ibrahim and Elshafie, 2016).*

Concerning intern students' level of knowledge regarding intrapartum care, the present study showed that the poor or the average level in terms of their knowledge on maternal competency standard decreased significantly in posttest 1 compared to the pretest. Meanwhile, there was notable and substantial increase in the number of students who were classified at the good level in posttest 1 compared to the pretest. This increase in the percentage of students classified within the good level continued over three points of time with one month separate (posttest1, posttest2, and posttest3). These findings suggest that education program applied by the researcher benefits intern students in term of level of knowledge.

The current study also revealed that very few students had good level of knowledge in Intrapartum care in pretest stage. This means that before applying the education program, the vast majority of participant students had either poor or average level of knowledge of maternity competence standard in labor care,

However after implementing the study (i.e., posttest 1), the percentage distribution of the students showed that students who were classified either at the poor or the average level decreased considerably in labor area compared to the pretest. This means that the intervention technique helped student's positively either poor or average level in the pretest to increase their knowledge of maternity competence standard.

On the same line with *Falgen and Cris (2015)* studied the effect of educational program on the level of knowledge regarding gynecological disorders concluded that, before utilization of educational sessions, most of the students (84.4%) had poor knowledge. After the educational sessions there was enhancement of knowledge score. It found that the mean scores of posttest were significantly higher after educational program compared to their values at pretest in all variables.

According to the present study finding, students' mean scores of knowledge in areas of labor care increased significantly ($p<.001$) in the posttest 1 compared to the pretest. However, students' mean scores of knowledge in this area did not change significantly in the posttest 2 compared to the posttest 1 ($p>.05$) or in posttest 2 compared to posttest 3 ($p>.05$).

These study findings were in the same line with the findings reported by *Fuzen (2014)* who developed an intervention technique based upon problem solving approach to develop knowledge of maternal competence standards within several areas, showing a significant differences ($p<.001$) between the pretest and posttest in students' knowledge of the targeted areas favoring the posttest. This confirms the stability of retention rate of students' level of knowledge, students might have found the learning material offered through the intervention technique easy to understand and grasp because it is closely linked to their previous knowledge.

Supporting current study findings a study done to investigate the outcomes of a nurse internship program initiated by *Holmes and Hanson (2015)* that was designed to increase new graduate nurses' clinical competence, confidence, and comfort. Using a quasi-experimental design, the experimental group scored significantly higher on organizational core competencies than the control group. These nurses were more comfortable with their leadership and management roles following the intervention. Organizations may wish to consider a nursing internship program as a means of improving the work environment.

Contrary to the present study findings a study done by *US Navy hospital (2012)* which used an intervention technique to develop undergraduate nursing students' knowledge of maternal competence standards, found that there was no significant differences ($p>.05$) between pretest and posttest 1,2 in students' level of knowledge, this differences may be due to the differences in mean by which student were taught cognitive skills and student interest between two studies.

The high number of maternal morbidity and deaths reflects that nursing students do not maintain necessary competencies to deliver a safe maternity care. Thus, there is a need for those students to acquire and maintain a set of skills that enable them to practice as a competent and caring nurse clinician and consequently deliver a safe maternity care according to global standards. The application of maternal competence standard scan makes the difference between life and death for both the mother and the baby *(Samgreen, 2012).*

Nursing student must perform psychomotor skills at a minimal competency level that ensure safe patient care, Regarding students' performance level on maternity competence standards in area of intrapartum care, present study showed that during Pretest the vast majority of students were classified

at the unsatisfactory level with a small percentage of students classified at the average or the good level of performance, this confirmed the lack of application of standard for practice as an important component of quality assessment programs in maternity health care service.

As regard to students' level of performance the present study revealed that the percentage of students who were classified at the satisfactory performance increased substantially compared to the pretest. This means that the education session regarding Intrapartum competences helped students belong to unsatisfactory category or average category in the pretest to increase and develop their performance skills of maternity competence standards in labor area and consequently move to the satisfactory category in the posttest. Notably, this increase in the percentage of students classified within the satisfactory level continued over three points of time with one month separate (posttest 1, posttest 2, and posttest 3).

The current finding **disagreed** with a study done by *Cheng et al. (2014)* who conducted a study to identify the effect of training program for nursing students; the opposite study concluded that students perceived a high level of their clinical competence both before and after completing the clinical training program.

The current study finding also supported by a study by *Elliot and Bradley (2013)* who developed an intervention technique using the World Health Organization guidelines to increase students' skills concerning the procedures to be taken to offer a safe antenatal care to women, reported significant differences ($p<.001$) between the pretest and posttest in students' performance on the procedures of antenatal care favoring the posttest. This similarity put a sound that the two intervention technique were evident to be effective in developing students' skills concerning maternity care.

According to a study done by *Huge and Kator (2014)* that supported the positive effect of intervention technique to increase students' skills to deal with some labor complications including placenta previa, breech position, and nuchal cord based upon guidelines of the American Congress of Obstetricians and Gynecologists, students' training and application of intervention techniques should be used appropriately and as an educational tool that enhances quality of maternity care.

The present study findings was congruent with a study done by *Cheng et al. (2014)* whom conducted a study to assess and compare knowledge and practices regarding BLS among Nursing Students before and after administration of training program, revealed The mean of post test knowledge score was higher than the mean of pre test knowledge score and the mean of post test practice scores was higher than the mean of pre test practice scores, Thus, the training program was effective in enhancing the knowledge and practices of Nursing Student.

Concerning the effect of the education program on enhancing students' overall competence using maternity competence standard in labor care. The present study showed that most of students were classified at the unsatisfactory level with almost one-third of the students classified at the moderate level in this area during pretest while a small percentage of students classified at the satisfactory level.

After implementation of the education sessions, this percentage increased significantly, this suggested that students' lack of both knowledge and skills in this area, have been improved by enhancing their overall competence in labor area by increasing their knowledge and performance skills, also the way in which the content of the intervention was presented might have also contributed positively towards improvement students' performance on the posttests compared to the pretest

Similarity, A study by *Kellaghan and Stufflebeam (2012)* investigated the effect of an educational program on caring behavior and professional self-perception in nursing students using a controlled pre/post test study design., the study findings favored the effect of the educational program because there was increased knowledge and understanding of caring theory and related concepts, a more holistic approach to care, enhanced caring practices, and improved self-perception in the study group compared with the control group during different periods of assessment

According to researcher point of view Competency assessment is always outcome oriented; the goal is to evaluate performance for the effective application of knowledge and skill in the practice setting. Competency assessment techniques address psychomotor, cognitive, and affective domains. Competencies can be generic to clinical practice in any setting and has to be significant at maternity health service.

In congruent with present study *Sherwood and Barnsteiner (2017)* studied the effect of clinical training program on clinical competence of nurse students in Taiwan that Students significantly increased their clinical competence after completing the training program. The preceptors generally rated the students with a high clinical competence score; however, the preceptors' scores were lower than the students' self-rated scores. The students' satisfaction with their preceptors positively influenced their decision to remain working in the hospital or unit where they received the practicum. The previous results **disagreed** with a study done by *Fuzen (2014)* that aimed to assess perceived clinical competence among nursing students after training program In this study, more than half of the study participants perceived themselves as incompetent.

There are several factors that can account for the significant increase in students' knowledge and performance on maternity competence standard after implementing educational sessions. It is possible that students were highly motivated and strongly enthusiastic to learn and understand the material and activities offered through the intervention period. Students might have found these material and activities interesting, challenging, useful, and updated. These positive feelings might have encouraged students to exert more effort, persist in learning, and achieve highly *(Maslow, 2013).*

The present study emphasized that there is an important evidences concerning the positive effectiveness of the education program in enhancing students' level of competence regarding intrapartum care. Students' competences included both knowledge about the maternal competency standard, and performance (implementation) of maternal competency standard, this supported the current research hypothesis.

Conclusion

Based on the results of the present study, it is concluded that:

- There were significant differences ($p < .001$) between the pretest and posttest 1 in students' overall maternal competency in area of intrapartum care. Specifically, students' mean scores of overall maternal competency in this area have increased significantly in the posttests (1, 2, and 3) compared to the pretest.

- Implementing of an education program improved level of competence among nurse students in area of intrapartum care. Students' competences included both knowledge about the maternal competency standard, and performance (implementation) of maternal competency standard.

Recommendation

In the light of the results of present study, the following recommendations are suggested:

- Intensive training program should be implemented to develop nursing students' awareness of maternal competency standards in other areas such as obstetric emergencies, maternal competency standards should be part of the academic and professional preparation of nursing students at the Faculty of Nursing.,Maternal competency standards should be integrated in the evaluation plan of nursing students.

- **Further** researches are needed to be conducted to investigate the obstacles anddifferent factors that hinder the development and/or implementation of maternal competency standards in maternal health care facilities.

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