

# Effect of Training Program on Nurse Intern's Knowledge and Practice Regarding Obstetric and Gynecological Skills at Benha University Hospital

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**Abstract Background:** Obstetrical and Gynecological nursing is a health care profession that focuses on the care of the women and newborn, for that reason nurse interns who receive the training in obstetrical and gynecological should be highly knowledgeable and well-trained caregivers for the overall safety and wellbeing of women, newborn and pregnancy outcome from the moment of menarche to menopause. **The aim of the research:** was to assess the effect of the training program on nurse intern's knowledge and practice regarding obstetric and gynecological skills. **Study design:** A quasi-experimental design was used to fulfill the aim of the research. **Setting:** This study was conducted in Outpatient Clinic, emergency and reception unit, Antenatal ward, delivery unit and Postnatal ward affiliated at Beha university hospital. **Study subjects:** A purposive sample of 80 internship nursing students one group (pre and post). **Tools:** two tools were used for collecting data; (1) an interviewing questionnaire sheet; includes two parts, personal characteristics internship nursing students, Assessment of the internship nursing students about obstetric and gynecological knowledge, (2) Nurse interns performance checklist about obstetric and gynecological skills. **Results:** Before implementation of the program the majority of nurse interns and slightly more than half of them had inadequate practice regarding obstetric skills and poor knowledge (86.3% & 55%, respectively). After the implementation of the program, the highest percentages of nurse interns and slightly more than half of them had adequate practice and good levels of knowledge (80 % & 57.5 % respectively). **Conclusion:** The present research concluded that implementation of training program for internship nursing students was effective in improving their obstetric knowledge and skills with considerable variation among pre and post-training of the training time nursing students as regards the total degrees of knowledge and fundamental nursing and generative skills as shown in the logbook. **Recommendations:** Continuous training educational programs and workshops should be planned on regular basis to nurse interns receiveing training in obstetric and gynecological unit about obstetric skills for enhancing nurse intern's practice and this programmes should made on free days so they don't interfere with nurse interns clinical work schedule to achieve high quality of care.

**Keywords:** training program, nurse interns, knowledge, practice, obstetric, gynecologic skills

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## 1. Introduction

The mission of nursing education is to produce qualified nurses with the requisite knowledge, attitudes and skills. For achieving this goal, clinical teaching is the cornerstone in nursing education. This lies on the clinical instructors and the behavior of them that play an important role in the learning process of nursing students **Bendetto** [1]. Nurse intern is a nurse who is entering the professional workplace for the first time, usually occurs from the point of graduation until competencies required

by the profession are achieved **Ellis and Hartley** [2]. Nurse interns using their knowledge and skills of different nursing courses such as obstetric and gynecological skills can actively assist or participate in all aspects of patient care **McEwen & Nies** [3].

The internship program is a thing that is needed for a Bachelor of Science in nursing accomplishing the fulfillment of year of a baccalaureate. The internship year is considered a time of transition from undergraduate nursing students to beginning level registered nurses. During this year nurse interns should acquire the values, attitudes, and goals fundamental to the nursing profession **Lancaster and Stanhope** [4].

The training internship program promotes strategies for new graduate recruitment and retention, provide an opportunity to consolidate clinical nursing knowledge in new areas of practice, provide an opportunity to exhibit understanding and competence in technological skills and processes related to the peculiarity in which they are doing. The program also allows for the application of sound clinical judgment and critical thinking throughout nursing process *University of Dammam College of Nursing* [5]. Also, Internship program increases new graduate confidence in knowledge and assessment skills, improves clinical skills and decision making *Cherry and Jacob* [6]. Nursing practice requires the development of higher-level cognitive skills, values, psychomotor and technological skills, and other competencies for care of patients across settings. The advanced estimating system is an often paramount factor in the competence of clinical education. Through clinical evaluation, the teacher arrives at judgments about students' competencies their performance in practice *Parsons & Mudd* [7]. Clinical learning guide integrated with interactive logbooks is considered an appropriate tool for clinical learning enhancement by providing opportunity for more interaction among student, clinical environment and instructors. Logbook is raised as one of the valuable clinical evaluation tool to monitor the achievement of educational goal *Roshangar* [8]. Logbook is designed to provide a guideline for nurse students during the internship program. The logbook includes alist of major skills/procedures to ensure the achievement of clinical objectives of each specific unit. The log book is kept by the nurse intern. After completion of task, it is the responsibility of nurse intern to check and to take the signature from immediate staff nurse trainer and submitted to the nursing department at the end of the internship. So, lastly logbook emphasize on major competencies and clinical skills in each unit rotation and assist in the follow up progress of nurse intern throughout internship program. Clinical evaluation is defined as an integrated form of evaluation seeking to combine knowledge, understanding, problem solving, technical skills, attitudes, and ethics in evaluation *Khosravi* [9]. Clinical evaluation methods are strategies for assessing learning outcomes in clinical practice and it is the often influential agent to match the clinical and academic nursing teaching *Gaberson et al* [10].

### 1.1. Significant of the Study

The nurse interns experience reality shock and lack of confidence during the internship program especial in the training area of obstetric and gynecological, that require from them to acquire skills to facilitate safer and more autonomous practice at a specified level of proficiency after graduation. The nurse interns must have special skills to manage pregnancy, childbirth, delivery, and normal birth, as well as situations of risk or complications with women and newborn. And whereas this study was not addressed by others researchers at the Faculty of Nursing, Benha University. So, the researchers decided to conduct a training program for nurse intern' to enhance their knowledge and practice regarding obstetric skills at Benha University to be highly knowledgeable and well-trained caregivers for wellbeing of women and newborn and

pregnancy outcome from the moment of menarche to menopause.

### 1.2. Aim of the Study

**The present research was conducted in order to:**

Assess the effect of training program on nurse intern's knowledge and practice regarding obstetric and gynecological skills at Benha university hospital.

This aim was conducted and achieved in accordance with the principles outlined through:

- 1- Assessing Nurse interns' knowledge regarding obstetric and gynecological skills.
- 2- Developing and designing an educational intervention program among nurse interns regarding obstetric and gynecological skills.
- 3- Evaluating the effect of educational intervention program regarding obstetric and gynecological skills on Nurse interns' knowledge and 'practice regarding obstetric and gynecological skills.

### 1.3. Research Hypothesis

In order to fulfill the purposes of the research, the following Hypotheses were formulated and tested

- 1- Nurse interns' knowledge regarding obstetric and gynecological skills would be improved after implementation of the training program.
- 2- Nurse interns 'practice regarding obstetric and gynecological skills would be improved after implementation of the training program.

## 2. Subjects and Method

### 2.1. Research Design

Quasi-experimental study one group pre/post training program was achieved in this research.

### 2.2. Research Setting

The research was carried out at Benha University Hospital. The clinical training fields included as following: Outpatient Clinic, emergency and reception unit, Antenatal ward, delivery unit and Postnatal ward .The research was organized from beginning of September 2018 to the end August 2019 (Internship year).

### 2.3. Sampling

#### 2.3.1. Sample Type

A Purposive sample was used in the research.

#### 2.3.2. Subjects

The sample of the study included nurse interns in the academic year 2018-2019, and practiced their internship year at Benha University Hospitals. The total number of nurse interns in the academic year 2018-2019, was 240 nurse interns spend their internship according to their residence and the research collected one third of total sample (80) practicing their internship year at Benha University Hospitals. assessed

before and after applying the educational intervention (pre-posttest).

## 2.4. Tools of Data Collection

### 2.4.1. First Tool - An Interviewing Questionnaire Sheet

It was designed by the researchers after reviewing the related national and international literatures, it was written in simple language its purpose was to collect the necessary data which covers the aim of the study. It will be designed in Arabic form; and consists of **two parts**:

**Part I: Personal Characteristics for Internship Nursing Students:** used to collect data about nurse interns such as; name, age, gender, marital status, residence, and unit of training.

#### Part 2: Knowledge Questionnaire Sheet:

To assess the nurse intern's knowledge about obstetric and gynecological skills. It consists of 12 questions as: definition of abdominal examination, purposes of abdominal examination, definition of perineal care, indication of perineal care, purposes of immediate baby care, definition of eclampsia, stages of an eclamptic event, types of lochia, purposes of breast care, purposes of fundus and lochia assessment, components of abgar score and causes of edema.

### 2.4.2. Second Tool: Internship Student's Performance Checklist

**Internship Student's Performance Checklist:** to assess the nurse intern's practice skills regarding all procedures training in the obstetric and gynecological unit based on a log book. It consists of 95 steps grouped under seven procedures which are:

- (1) Abdominal examination & fetal heart rate evaluation (20 steps)
- (2) Caring for Eclamptic patient (15 steps)
- (3) Pitting edema assessment (10 items).
- (4) Perineal care (15 items)
- (5) Immediate care of the new born (10 items)
- (6) Fundus and lochia assessment (10 item)
- (7) Breast care (15steps)

#### The scoring system:

The responses were, complete correct answer was scored (2), incomplete correct answer was scored (1) and the incorrect or unknown answer was scored (zero). The total score for each nurse interns were calculated and converted into percent score by dividing the total score by the maximum possible score.

The level of knowledge score was good if the knowledge score equal and more than 70%, the level of knowledge score was average if the score range from 60% to less than 70% and the level of knowledge score was poor if the score less than 60%.

Practices scoring system: The studied nurse interns were scored as follow: Satisfactory was scored (2) Un satisfactory was scored (1) Not done was scored (0) The total practice score was summed up and categorized as follows:

Adequate  $\geq 60\%$  of total practices score.

Inadequate  $< 60\%$  of total practices score .

## 2.5. Methods

An official permission was obtained from the Scientific

Research Ethics Committee at the Faculty of Nursing Benha University directed to the nurse director of Benha University hospital and the nurse managers of Obstetrics & Gynecological unit.

### 2.5.1. Reliability

The reliability of the tools through estimating its internal consistency which used Cronbach alpha coefficient. The reliability coefficient was 0.89 for performance checklist and was 0.78 for Knowledge questionnaire sheet.

### 2.5.2. Validity

The tool was distributed to a jury group and then the content and face validity were established by a jury of seven experts in the specialty of Obstetrics & Gynecological Nursing from the faculties of nursing in Ain Shams, and Zagazig University. The first part included the opinions of the experts for each item that were recorded on a two point scale: relevant, and not relevant; and the second part covered general or overall opinion about the form which express their opinions and comments on the tool for clarity, applicability, comprehensiveness, understanding, any suggestions for any additional or omissions of items and ease of implementation. According to their opinions all recommended modifications were performed by the researcher.

### 2.5.3. Ethical Considerations

The study was approved by the Ethics Committee at the Faculty of Nursing Benha University. The verbal explanation of the nature, purpose, and benefits of the study was performed by the researcher to nurse interns included in the research sample. Oral consent was taken from subjects and reassured them about confidentiality and anonymity of the study. They were informed about their right to refuse or withdraw from the study at any time without giving a reason.

### 2.5.4. Pilot Study

A pilot study was carried out with 10% of the study sample (10) nurse interns to test the questionnaire feasibility, understandability and to estimate the time consumed for filling in the checklist. A brief explanation of the purpose of the study was provided to every participant in the pilot study, and then provided with a copy of guidelines. The time consumed in fill the questionnaire and checklist was about 30 to 40 minutes. Data collected from the pilot study was reviewed and no modifications to items of the tools so the nurse interns included in the study sample.

#### The purposes of the pilot study were to:

- Ascertain the clarity and the applicability of the tools
- Ascertain the relevance and content validity of the tools.
- Estimate the time needed to complete the sheet.

### 2.5.5. Procedure

The research was conducted through three phases:

#### 1) Preparatory phase:

In this phase, Maternity Nursing training course and the

logbook were developed, based on the review of related Maternity Nursing clinical procedures. Time table of the training course was designed during this phase to be conducted through two sessions per day/a week except the last week include three sessions, the session duration was around three hours. One hour for revising the topic and two hours for demonstration. The training course continued 16 weeks (8 weeks pre test for knowledge and skills: 4 weeks redominstration in lab and 4 weeks in clinical training areas (8 weeks posttest in clinical training areas).

## 2) Application phase:

The collaborating students (N=80) Were divided into 5 groups and 16 nurse interns for each. The researchers interviewed the groups to clarify the nature of the research and explained the logbook. Then the pre-training experimental was carried out for all the nurse interns before directly the training program. The course of training was performed during two sessions per day/a week the session period was about three hrs. One for presentation the subject and two hours for redemonstration. Various education methods were utilized like figures and models by the researchers, as well as to the logbook which gives to each student at the end of the sessions had contained enough learning around the clinical procedure. The training course for directing the training on functional skills, applications, and post-training estimation.

## 3) Evaluation phase:

At the end period of training course, the nurse interns were estimated utilizing the checklist and questionnaire sheet after the end duration of the training course at obstetric and gynecological training regions (two weeks). Evaluation of nurse interns was carried out by the researchers all the period through the training course. Then the researchers perfected the checklist found on student's showing through the post-training duration.

### 2.5.6. Limitation of the Study

Sometimes it was difficult to assemble the entire group of nurse interns for the educational sessions because of their different times of their practical sections.

### 2.5.7. Statistical Design

Data entry and statistical analysis were performed using computer software, the statistical package for social sciences (SPSS), version 14. Suitable descriptive statistics were used such as; frequency, percentage. Where changes qualified by the average and standard deviation. Chi-square test and Fisher exact test were utilized than categorical changes. A two-tailed  $p < .05$  was significant statistically.

## 3. Results

Table 1 shows Personal characteristics of nurse interns. The personal characteristics of nurse interns illustrated in Table 1: It reveals that the mean age of nurse interns was  $22.8 \pm 0.96$ . The highest percentages of them were female, single and living in rural areas (72.5%, 88.8 %, & 67.5 % respectively). Gaining information, concerned with the actual doing and communication skills is the greatest percentage around the advantages obtained from the training in health setting showed by the nurse interns and developing leadership skills (42.5% & 16.3%, respectively).

Table 2 shows the Nurse intern's practice regarding obstetric skills throughout program phases. It is clear from the table there is a highly statistically significant difference between nurse interns' practice regarding all obstetric skills before and immediately program implementation ( $p < 0.000$ ).

Figure 1 displays that levels of nurse interns' practice regarding obstetric skills throughout program phases. It is well-defined from the figure before implementation of the program the majority of nurse interns (86.3%) had inadequate practice regarding obstetric skills. After the implementation of the program, the highest percentages of them (80 %) had adequate practice.

Table 3 shows Nurse intern's knowledge regarding obstetric skills throughout program phases, clarifies that, Nurse intern's knowledge regarding obstetric skills throughout program phases. It is clear from the table there is a highly statistically significant difference between nurse interns' knowledge before and immediately program implementation in ( $p < 0.000$ ).

Figure 2 displays that levels of nurse interns' knowledge regarding obstetric skills throughout program phases. It is well-defined from the figure before implementation of the program slightly more than half of nurse interns (55 %) had poor knowledge. While after the implementation of the program, slightly more than half of nurse interns (57.5 %) had good knowledge.

Table 4 show expresses the relation between the total level of practice and personal characteristics of the nurse interns throughout program phases. It is clear from the table there is no statistically significant difference between the total level of nurse intern's practice and their personal characteristic before and immediately post program implementation ( $p > 0.05$ ).

Table 1. Personal characteristics of nurse interns (N=80)

Personal characteristics	No	%
<b>Age</b>		
22 y	37	46.3
23 y	26	32.5
24 y	10	12.5
25 y	7	8.8
<b>Mean <math>\pm</math>SD</b>	22.8 $\pm$ 0.96	
<b>Sex</b>		
Female	58	72.5
Male	22	27.5
<b>Residence</b>		
Urban	26	32.5
Rural	54	67.5
<b>Marital status</b>		
Married	9	11.3
Single	71	88.8
<b>Training area</b>		
Antenatal ward	26	32.5
Delivery unit	6	7.5
Outpatient Clinic	17	21.3
Post natal ward	25	31.3
Reception unit	6	7.5
<b>Benefits of clinical training</b>		
Gaining cognitive, practical and communications skills	34	42.5
Acquiring new clinical experiences	11	13.8
Raising Self confidence	12	15.0
Enhancing the concept of patients centered Care	10	12.5
Developing Leadership Skills	13	16.3

Table 2. Nurse intern’s practice regarding obstetric skills throughout program phases (n=80)

Skills	Pre program				Post program				X <sup>2</sup>	P-value
	Done		Not done		Done		Not done			
	No	%	No	%	No	%	No	%		
Abdominal examination	10	12.5	70	87.5	67	83.8	13	16.2	85.6	0.000
perineal care	9	11.3	71	88.7	64	80.0	16	20	78.6	0.000
Immediate care of newborn	4	5.0	76	95	64	80.0	16	20	92.2	0.000
Fundus and lochia assessment	5	6.3	75	93.7	63	78.8	17	21.2	101.0	0.000
Breast care	10	12.5	70	87.5	59	73.8	21	26.2	62.7	0.000
Pitting edema assessment	4	5.0	76	95	63	78.8	17	21.2	90.4	0.000
Caring for eclamptic patient	8	10.0	72	90	58	72.5	22	27.5	81.4	0.000

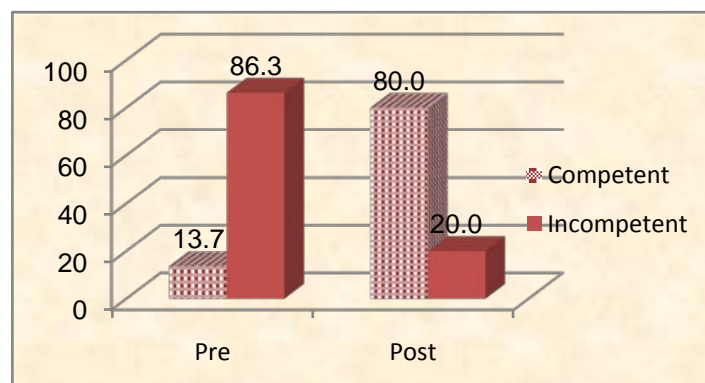


Figure 1. Levels of nurse interns’ practice regarding obstetric skills throughout program phases (N=80)

Table 3. Nurse intern’s knowledge regarding obstetric skills throughout program phases (N=80)

	Pre program						Post program						X <sup>2</sup>	P-value
	Complete correct		Incomplete correct		Incorrect or unknown		Complete correct		Incomplete correct		Incorrect or unknown			
Abdominal examination	14	17.5	24	30.0	42	52.5	43	53.8	20	25	17	21.3	20.4	0.000
Perineal care	10	12.5	19	23.8	51	63.7	29	36.3	36	45	15	18.8	37.5	0.000
Immediate care of newborn	6	7.5	32	40.0	42	52.5	36	45.0	29	36.3	15	18.8	34.3	0.000
Pitting edema assessment	3	3.8	34	42.5	43	53.8	32	40.0	31	38.8	17	21.3	35.4	0.000
Fundus and lochia assessment	10	12.5	29	36.3	41	51.2	34	42	32	40	14	17.5	32.2	0.000
Caring for eclamptic patient	11	13.8	24	30.0	45	56.3	34	42.5	23	28.7	23	28.7	18.8	0.000
Breast care	16	20.0	24	30.0	40	50.0	36	45	33	41.3	11	13.8	20.1	0.000

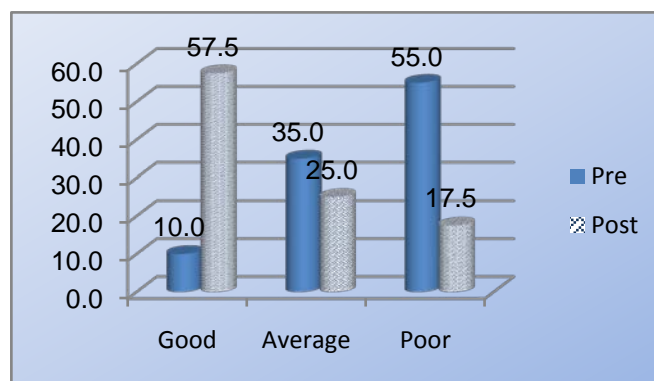


Figure 2. Levels of nurse interns’ knowledge regarding obstetric skills throughout program phases (N=80)

**Table 4. Relation between total level of practice and personal characteristics of the nurse interns throughout program phases (N=80).**

Personal characteristics	Pre program				X <sup>2</sup>	p-value	Post program				X <sup>2</sup>	p-value
	Inadequate (N=69)		Adequate (N=11)				Inadequate(N=16)		Adequate (N=64)			
	No	%	No	%			No	%	No	%		
<b>Age</b>												
22 y	34	49.3	3	27.3	12.8	0.09	8	50.0	29	45.3	3.84	0.32
23 y	24	34.8	2	18.2			7	43.8	19	29.7		
24 y	5	7.2	5	45.5			0	0.0	10	15.6		
25 y	6	8.7	1	9.1			1	6.3	6	9.4		
<b>Residence</b>												
Urban	25	36.2	1	9.1	3.18	0.07	2	12.5	24	37.5	3.64	0.056
Rural	44	63.8	10	90.9			14	87.5	40	62.5		
<b>Marital status</b>												
Married	7	10.1	2	18.2	0.61	0.43	2	12.5	7	10.9	0.03	0.86
Not married	62	89.9	9	81.8			14	87.5	57	89.1		
<b>Training area</b>												
Antenatal ward	20	29.0	6	54.5	3.66	0.45	5	31.3	21	32.8	2.49	0.64
Delivery unit	5	7.2	1	9.1			0	0.0	6	9.4		
Outpatient Clinic	15	21.7	2	18.2			5	31.3	12	18.8		
Postnatal ward	23	33.3	2	18.2			5	31.3	20	31.3		
Reception unit	6	8.7	0	0.0			1	6.3	5	7.8		

**Table 5. Relation between total score of knowledge and personal characteristics of the nurse interns throughout program phases (N=80)**

Personal characteristics	Pre program						Post program					
	Incorrect		Correct & Incomplete		Correct		Incorrect		Correct & Incomplete		Correct	
	No	%	No	%	No	%	No	%	No	%	No	%
<b>Age</b>												
22 y	19	43.2	15	53.6	3	37.5	4	28.6	9	45.0	24	52.2
23 y	18	40.9	7	25.0	1	12.5	8	57.1	8	40.0	10	21.7
24 y	4	9.1	3	10.7	3	37.5	1	7.1	2	10.0	7	15.2
25 y	3	6.8	3	10.7	1	12.5	1	7.1	1	5.0	5	10.9
	X <sup>2</sup> =7.89 p-value =0.24						X <sup>2</sup> =7.19 p-value =0.30					
<b>Residence</b>												
Urban	17	38.6	8	28.6	1	12.5	6	42.9	9	45.0	11	23.9
Rural	27	61.4	20	71.4	7	87.5	8	57.1	11	55.0	35	76.1
	X <sup>2</sup> =2.41 p-value =0.30						X <sup>2</sup> =3.65 p-value =0.16					
<b>Marital status</b>												
Married	4	9.1	4	14.3	1	12.5	1	7.1	3	15.0	5	10.9
Not married	40	90.9	24	85.7	7	87.5	13	92.9	17	85.0	41	89.1
	X <sup>2</sup> =0.47 p-value =0.78						X <sup>2</sup> =0.52 p-value =0.76					
<b>Training area</b>												
Antenatal ward	12	27.3	10	35.7	4	50.0	4	28.6	7	35.0	15	32.6
Delivery unit	3	6.8	3	10.7	0	0.0	0	0.0	1	5.0	5	10.9
Outpatient Clinic	9	20.5	6	21.4	2	25.0	1	7.1	3	15.0	13	28.3
Postnatal ward	16	36.4	7	25.0	2	25.0	6	42.9	9	45.0	10	21.7
Reception unit	4	9.1	2	7.1	0	0.0	3	21.4	0	0.0	3	6.5
	X <sup>2</sup> =3.86 p-value =0.86						X <sup>2</sup> =13.08 p-value =0.10					

**Table 6. Correlation between the total score of knowledge and practice of nurse interns regarding obstetric skills throughout of program phases (N=80)**

	Total knowledge			
	Pre program		Post program	
	r	p-value	r	p-value
Practices pre	0.51	0.97		
Practices post			0.756	0.000**

\* Statistically significant at P < .05



Table 5 expresses the relation between the total score of knowledge and personal characteristics of the nurse interns throughout program phases. It is clear from the table there is no statistically significant difference between the total score of nurse intern's knowledge and their personal characteristic before and immediately post program implementation ( $p > 0.05$ ).

Table 6 indicates a correlation between the total score of knowledge and practice of nurse interns regarding obstetric skills throughout of program phases. It is clear from the table there is only a positive correlation between knowledge and practice score of nurse interns after implementation of the program ( $r = 0.756$  &  $p = 0.000$ ).

## 4. Discussion

Skill is defined as the ability to apply specific knowledge, capabilities, attitudes, and values to standard performance required in a specific context the acquisition and consolidation of skills develop gradually along with education; therefore, this is an evolutionary phenomenon that improves as students manage to grasp acquired knowledge *Zangao MO, Mendes FRP* [11].

In this research the researchers attempted to Assess the effect of training program on nurse intern's knowledge and practice regarding obstetric and gynecological skills that reported in logbook at Benha university hospital. The findings of this research study were approved the research hypotheses which is Nurse interns' knowledge and 'practice regarding obstetric and gynecological skills would be improved after implementation of the training program.

Obstetrical and Gynecological nursing is a healthcare profession that focuses on the care of the women and newborn, for that reason nurse interns who receive the training in Obstetrical and Gynecological should be highly knowledgeable and well-trained caregivers for the overall safety and wellbeing of women from the moment of menarche to menopause. Building knowledge and educational skills is considered as a powerful tool for personal performance improvement and to maintain the efficiency of any health care organization *Sajjadnia et al* [12].

Therefore, the current research aimed to assess the effect of training program on nurse intern's knowledge and practice regarding obstetric and gynecological skills at Benha university hospital. With respect to the hypotheses introduced in study, the results of the present study supported the research hypotheses.

### 4.1. Personal Characteristics of the Nurse Interns

Regarding the findings of the present study indicated that the mean age of nurse interns was twenty two years. The highest percentages of them were female, single and living in rural areas. It may due to the nursing occupation is feminists and they consider that the studying of nursing is an opportunity and occupation after graduation match with the female rather than male, also girls more willing than men to study in nursing, also the internship year include training in different departments and critical care

areas in which the students assign to different shifts to carry out many assignments , in addition to there is a percentage of absence must exceed the nurse intern, resulting in the repate the area of training so the students prefer to marry after finish the training year , this gives the explanation for this result.

Additionally, this finding was agreement with a study Carried out at Faculty of Nursing, Benha university by *Abdullah* [13]. Who assess the effect of time management educational program for nurse students on their productivity and found that the highest percentages of the nurse students were female, single and living in rural areas. Again, the results of current study were go in line with a study in Faculty of nursing, Zagazig university by *Ibhraim* [14]. Who found that almost all of the student nurses were female. On the other hand, the findings of the present study disagreement with study of *Idon et al* [15]. Who found that the highest percentages of the nurse students were male.

Gaining information, concerned with the actual doing and communication skills is the greatest percentage around the advantages obtained from the training in training area in the hospital reported by the nurse interns followed by developing leadership skills. In researchers' opinion, this could have resulted from the training of nurse students in different department during the internship year improve the communication skills of nurse interns through interaction with health team members , patients and his/her family, their colleagues, in addition to the training area of the nursing administration for a month with the nursing director of the hospital learn them with effective management and leadership skills.

Furthermore, the finding of the current study is in agreement with the previous studies of *Torabi* [16]. And *Karampourian et al* [17]. Who stated that the internship year benefit the nurse students to developing leadership skills. Also, the study conducted at assiut university by *Mahmoud and Omar* [18]. Who found gaining cognitive, concerned with the actual doing and communication skills is the greatest percentage around the advantages obtained from the training in training area in the hospital during internship year reported by the nurse interns.

### 4.2. Knowledge Score among Nurse Interns throughout the Program Phases

On investigating the findings of the present study indicated that slightly more than half of nurse interns had a poor level of knowledge regarding procedure included in maternity logbook before implementation of the program. Meanwhile, after implementation of the program more than half of nurse interns had a good level of knowledge with highly statistically significant differences. Ultimately, This may be due to the obstetric and gynecological nursing course that the nurse interns taught in the third year in the faculty of nursing include a theoretical part about materinity procedure in the log book , as well the increase number of students and shortage of teaching staff with speciality of obstetric nursing as a result most of them are vacationers, whether they travelers outside Egypt to teach at Arab universities, or leave accompanying a husband or child care this give the explanation of this results, as well as this improvement could be assigned to

one or more rationales, which include the comprehensive content of the educational training program, the written handout of the program which serves as ongoing reference, nurse interns interest and keenness to know and change, consideration of the patterns of adult learning, encouragement of questions, interactive talk with the utilization of multimedia and repetition of the knowledge through a mixture of textiles. As well the nurse interns were satisfied with the content of the program and they endeavor to apply what learn in program.

In partial confirmed of these results, *Lotfi et al* [19]. Who observed the influence of utilizing Logbook on Nursing Students' Learning in Iran showed that the average degree of the nursing student knowledge in ICU ward was significantly improvement after implementation of the training program.

Also the study carried out in Benha university by *Ahmed & Abdelhakm* [20]. Who found the highest percentage of nurses had poor knowledge before intervention. However, the highest percentage of them had good knowledge after intervention.

Regarding the knowledge dimensions, the abdominal examination and breast care had the highest mean score as reported by intern nurses before and after program implementation with statistically significant differences. This may be due to the obstetrics and gynecology nursing course that the nurse interns taught in the third year including about abdominal examination and breast care this give the explanation of this results, as well as this improvement could be assigned to one or more rationales, which include the comprehensive content of the educational training program. This findings were agreement with a study of *Ahmed & Abdelhakm* [20]. Who found that the abdominal examination and breast care had the highest mean knowledge score as reported by nurses before and after program implementation with statistically significant differences.

The findings of the present study show that the lowest mean score of nurse's interns' knowledge was related to the assessment of edema before program implementation and this percentage increase after implementation of the program but still lowest. This may be due to the fact that nurse interns did not receive adequate information or may need for refreshing in-services training regarding management of pre-eclampsia and eclampsia during labor. This finding agreement with the study carried out in Port Said by *El-Bahy et al* [21]. Who studied "Effect of Educational Program for Nurse interns about Pregnancy Induced Hypertension on their Knowledge in Port Said Hospitals and found that the highest percentage of participants had a high knowledge about nursing care for preeclampsia and eclampsia before and after implementation of the program.

### 4.3. Practice Score among Nurse Interns throughout the Program Phases

On investigating the findings of the present research were indicated that the majority of nurse interns had inadequate level of practice regarding procedure included in maternity logbook before implementation of the program. Meanwhile, after implementation of the program the highest percentages of them had adequate practice,

with a statistically significant difference. This may be due to absence of training courses and workshop during the internship year about obstetric skills that influence on their practice, in addition to the training program includes different teaching methods and media such demonstration, re-demonstration, video that aim to learn nurse interns how to perform the procedures correctly.

Additionally, the results of current study were consistent with a study conducted of *Jasper et al* [22]. Who found that the practice score of nurse interns was improved after implementation of the training program. While this finding is disagreeing with the study carried out by *Cotanda et al* [23]. Who found that the application of the training program not improved nurse interns' practices.

Regarding the practice dimensions, the abdominal examination and breast care had the highest mean score as reported by intern nurses before and after program implementation with statistically significant differences. This may be due to the obstetric course that the students taught in the third year helps them to acquire skills in rendering nursing care to normal and high risk pregnant women during antenatal, natal and postnatal periods in hospital, the abdominal examination and breast care are the essential procedures that the student taught throughout the course and this results also match with knowledge score that the highest mean scores were related to abdominal examination and breast care, this give the rational for this results. This findings were agreement with a study of *Ahmed & Abdelhakm* [20]. Who found that the abdominal examination and breast care had the highest mean practice score as reported by nurses before and after program implementation with statistically significant differences.

Also *Mahboubeh and MoloudFakhri* [24]. Who showed that the average degree of the skills of nurse students related to abdominal examination and breast care was improved after program implementation.

Regarding the practice dimensions, the immediate care of newborn & pitting edema assessment had the lowest mean score as reported by intern nurses before and after program implementation with statistically significant differences. This finding was agreement with a study of *Henderson., et al* [25]. Who found that the immediate care of newborn had the lowest mean score as reported by nurse students. Also the study of *Brenner., et al* [26]. Who reported that, training nurse students in obstetric emergency and newborn care concentrate the need to build the capacity of nurse students to recognize and manage complications during pregnancy, labor and the post-partum period through providing skills and competency-based training in skilled birth attendance, emergency obstetric care and early newborn care which improved after program implementation.

### 4.4. Relation between Knowledge, Practice Scores and Personal Characteristics of Nurse Interns

Finally, the above mentioned results can be concluded as there is no statistically significant difference between the total score of nurse intern's knowledge and practice and their personal characteristic before and immediately post program implementation. This may be due to many



constituents that influence on the knowledge and the practice of nurse interns such as nursing curriculum, training classes, workshop, self- learning and conferences not the personal characteristics of the nurse interns.

Furthermore, This findings agreement with the study of *Kavitha et al* [27]. Who found that there was no significant relation between nurse interns' knowledge and practice regarding emergency obstetric management and their age. While the findings of the current study were disagreement with the results of the previous studies of *Pehlivan and Kaushar* [28]. They conclude that female students had a high level of knowledge and practice than male. Again, the study of *Nassar* [29]. Who shows that the gender was good predictors to assess knowledge and practice of nurse students. Furthermore, the study of *Yahya et al* [30]. Who found that there is a positive correlation between knowledge score and practice and personal characteristic of nurse students related to gender.

#### 4.5. Relation between Knowledge and Practice Scores

In relation to correlation between knowledge and practice scores, The findings of the current study revealed that there is a positive correlation between knowledge and practice score of nurse interns after implementation of the program. This mean that nurse interns acquire knowledge that lead to enhance their practice and the training program help nurse interns to acquire the sufficient knowledge and practice.

This findings agreement with the study of *Nassar* [29]. Who mentioned that the applications of training program had been more effective in increasing the nurse interns 'knowledge that lead to improving in their practice. Also, the study of *Mohamed* [31]. Who reveals that a positive correlation between participants 'knowledge and practice after implementation of the program. While this results disagreement with the study of *Eldeeb and Eldosoky* [32]. Who showed non-significant correlation between knowledge and skills scores among nurse interns.

### 5. Conclusion

Hence, based on the findings of the present research, it could be concluded that, the above- mentioned findings proved and reinforced the research hypothesis. implementation of training program for internship nursing students was effective in improving their obstetric knowledge and skills with a considerable variation among pre and post-training of the nursing students as concerns the total degrees of knowledge and basic nursing and obstetric procedures illustrated in the logbook. Furthermore, the above-mentioned findings proved and supported the research hypothesis.

### 6. Recommendations

In the light of the findings of the current study the following recommendations are suggested:

- Future studies can be built on the results of this study and Dissemination of educational program for

all internship nursing and female nursing university students was effective in improving their obstetric knowledge and skills.

- Continuous training educational programs and workshops should be planned on regular basis to nurse interns receive training in obstetric and gynecological unit about obstetric skills for enhancing nurse intern's practice and this program should made on free days so they don't interfere with nurse clinical work schedule to achieve high quality of care.
- College educators should emphasize the importance of skills' lab to enhance students' psychomotor obstetric skills.
- Offering preceptor / clinical instructors training classes about obstetric and gynecological skills and even certifying these preceptors prior to allowing them to precept would be beneficial to both the preceptor and the preceptee.

### 7. Further Research

Implementation of training program for nurses in obstetric and gynecological department at benha university hospital.

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