The Effect of Instructional Guidelines for Maternity Nurses' Performance Regarding Management of Normal Labor Stages

Rabab Nady Sayed[1], Shaimaa Hassan Mohamady[2], Hanan Fawzy Elsayed[3]

1 B.S.C in nursing science 2017, nursing specialist at Gamal Abdi El Nasser (Central Hospital Snores) at Fayoum city).

2 Assistant. Professor of Maternal and Newborn Health Nursing, Faculty of Nursing – Helwan University.

3 Assistant. Professor of Maternal and Newborn Health Nursing, Faculty of Nursing – Helwan University.

Email: rababsadek93@gmail.com, Rabab.Ms1062@nursing.helwan.edu.eg

Abstract

Background: Normal labor is a significant event in a woman's life with deep physical and psychological and emotional effects on the woman. This is the time of great hope, happy anticipation; labor can also be a period of fear, suffering and even death. Complications of pregnancy and labor are often the leading causes of maternal mortality and morbidity especially in the developing countries. *Aim:* This study aimed to evaluate the effect of instructional guidelines for maternity nurses' performance regarding management of normal labor stages. *Design:* A quasi-experimental design (one group pre-posttest) was used in the study. *Setting:* The study was conducted at the obstetric and gynecological department in El Nabawi El Mohandas (public hospital in Fayoum) and Gamal Abdi El Nasser (Central Hospital Snores) at Fayoum city. *Sample:* A convenience sample was utilized in this study which included all maternity nurses (50). **Tools**: Two tools were used in this study: first tool A Structured interviewing questionnaire. Second Tool: Observational checklist regarding management of different stages of normal labor. *Results:* maternity nurses' knowledge &practice was improved after the implementation of instructional guidelines regarding management of normal labor stages, highly statistically significant difference between the level of studied nurse's performance pre and post regarding management of normal labor stages. *Conclusion:* instructional guidelines have positive effect on nurse's performance regarding management of normal labor stages as the levels of maternity nurses' knowledge & practices regarding the management of normal labor stages was improved after the implementation of instructional guidelines regarding management of normal labor stages. *Recommendations:* Development of educational sessions regarding management of normal labor to provide maternity nurses update in knowledge and practices.

Keywords: Instructional Guidelines. Nurses' performance, Normal labor stages

Introduction

Labor is series of events that take place in the genital organs in an effort to expel the viable products of conception out of the womb through the vagina into the outer world. Labor is divided into four stages. The first stage starts from the onset of true labor pains and ends with full dilatation of the cervix. The second stage ends with expulsion of the fetus from the birth canal. The third stage ends with expulsion of the placenta and membranes. The fourth stage is beginning after the expulsion of placenta and membranes lasts for one hour. **(Yaseen, et al., 2021)**

3896

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

More recent data has characterized the normal first stage of labor differently including that the latent phase of labor is longer not transitioning from latent to active labor until about 6 cm of cervical dilation in a majority of women. These two factors would lead to a change in management with the diagnosis of arrest of the first stage of labor being made at 6 cm cervical dilation or beyond in the setting of ruptured membranes and no cervical change for at least 4 H of adequate contractions or 6 h of inadequate contractions. **(Caughey.,2020)**

During the second stage of labor, the maternal pelvic floor muscles undergo repetitive stretch loading as uterine contractions and strenuous maternal pushes combined to expel the fetus. It has recently been demonstrated that soft tissues can accumulate damage under repetitive physiological (submaximal) loads. It is well known to material scientists that this damage accumulation can decrease tissue resistance to stretch & result in a partial or complete structural failure. **(Esquinas, et al., 2020).**

The third stage of labor begins after the baby is born and ends when the placenta separates from the wall of the uterus and is passed through the vagina. The third stage of labor typically lasts between 10 and 30 minutes; if the placenta fails to separate within 30 minutes after childbirth, the third stage is considered to be prolonged. If the third stage of labor lasts longer that 18 minutes, it is associated with a significant risk of postpartum hemorrhage (PPH). **(Ismail, et al., 2020).**

During fourth stage of labor, after pains can lead to maternal and neonatal complications. Reported pain in the early hours postpartum as one of the most important factors contributing to chronic postpartum pain and depression. Furthermore, pain and stress increase adrenaline release and decrease oxytocin release, thus leading to the cessation of the oxytocin reflex and disrupting breast milk production in addition to causing discomfort for the mother. **(Sharifi, et al., 2022)**.

In the health care system, nurses make up the greatest percentage of health care providers. Instructional guidelines have become an important subject in nursing and is being integrated into daily practices because the influences on the capabilities, responsibility and professional development of nurses. Improving quality of care is essential to ensure patient safety and accelerate reductions in mortality and morbidity. **(Alatawi, et al., 2020).**

Significance of the study:

The labor is crucial process for both the mother and neonate. In addition, any poor or inadequate management provided by the health care team will lead to maternal and neonatal complications. According to the estimation of inter-Agency group, 2017, the maternal mortality rate in Egypt was 37 deaths/100,000 live births as 94% of all these deaths occur in low and lower middle-income countries. While the maternal mortality rate worldwide was 211 deaths/100,000 lives births (***WHO, UNICEF, UNFPA, 2019).***

Aim of study:

The aim of study was to evaluate the effect of instructional guidelines for maternity nurses' performance regarding management of normal labor stages.

Research hypothesis:

1. The levels of maternity nurses' knowledge regarding the management of normal labor stages will be improved.

2. The levels of maternity nurses' practices regarding the management of normal labor stages will be improved.

3897

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Subject and methods:

Research design:

A quasi-experimental design (one group pre – posttest).

Setting:

The study was conducted at the obstetric and gynecological department in El Nabawi El Mohandas (public hospital in Fayoum) and Gamal Abdu El Nasser (Central Hospital Snores) at Fayoum city.

Sample

Type of the sample:

Convenience sample was utilized in this study.

Sample size:

All maternity nurses (50) from the predetermined settings.

Tools of data collection:

Two tools were used for data collection in the present study;

1st Tool: A Structured interviewing questionnaire

This tool was designed by researcher, after reviewing the related current and previous literature and translated to Arabic language and included two parts as the following:

Part one: *General characteristics of the maternity nurses* is included five questions used to assess the general characteristics of the maternity nurses such as age, place of work, level of education, years of experience and any training courses regarding the stage of normal labor.

Part two: Maternity nurses' knowledge regarding the management of different stages of normal labor.

This tool was designed by researcher and translated to simple Arabic language, after reviewing the related current and previous literature and references **(Tih, etal.,2021), Tolera, & Feng.,2017) & (Ramadhani, etal.,2020).**It was consist of 25 questions to assess the maternity nurses' knowledge regarding the management of different stages of normal labor:Definition of normal labor, signs and symptoms of normal labor, true and false labor pain, different stages of normal vaginal delivery, mechanism of labor, management of labor, danger signs during labor, duration of labor.This tool was applied before and after the instructional guidelines session to assess the effect of instructional guidelines on nurse`s level of knowledge.

Knowledge scoring system:

All knowledge variable was weighted according to items included in each question, the correct & complete answer was given score (3), the correct & incomplete answer was given score (2), and don't know was assigned as (1) score.

The total score for the nurse's knowledge regarding the management of normal labor stages was 75 points, which divided into two levels as the following:

- Satisfactory≥60% (≥45 points).
- Unsatisfactory< 60 (< 45 points).

2nd Tool: Observational checklist

This tool was designed by researcher, after reviewing the related current and previous literature**: (WHO., 2018), (Alemu.,2021) & (Ajavon,et al.,2021)**To assess the maternity nurses' practice regarding management of different stages of normal labor.*Consisted of four parts as the following:*

Part I: checklist of first stage of labor: consisted of sixteen steps which was used to assess the practices of maternity nurses regarding the management of first stage of normal labor as welcome and greet the expected mother ,fill the admission card information ,ensure privacy ,hand hygiene before each procedure

3898

,obtain the history ,differentiate between true and false labor pain ,record time, color, odor and consistency of membranes if ruptured ,perform Leopold's maneuver ,assess and record fetal heart rate (FHR).

Part II: checklist of second stage of labor: consisted of sixteen steps which was used to assess the practices of maternity nurses regarding the management of second stage of normal labor as :check good place, light, and complete equipment ,put mother in lithotomy position ,identify signs of starting second stage of labor ,explain procedure to the mother, teach her to push down during contraction and take deep breathing in between ,scrubbing, growing and gloving ,prepare sterile instruments table ,give perineal care.

Part III: checklist of third stage of labor: consisted of fourteen steps which was used to assess the practices of maternity nurses regarding the management of third stage of normal labor as: observe signs of placental separation, give oxytocin as order, assist doctor in gently expulsion of the placenta in a circular motion, observe the placental lobes to   confirm that nothing is detached or retained, repair episiotomy and check for REEDA, ensure well contracted uterus, give perineal care.

Part IV: checklist of forth stage of labor: consisted of fifteen steps which was used to assess the practices of maternity nurses regarding the management of forth stage of normal labor as: hand hygiene and wear gloves, keep mother's privacy, observe the vital signs regularly every 15 minutes at 1st hour then every 30 minutes at 2nd hour help the mother to lie on her back with her knees slightly bent ,massage the fundus using one hand and the other gloved hand lowered the perineal pad to assess the lochia flow in the pad ,assess the fundal level, position, and size and consistency then massage as needed.

Practice scoring system: It is based on nurse's practices to 61 steps (total optimal score was 122 points). The practices has been scored as done = 2 and not done = 1. The total scores for the nurse's practice regarding management of normal labor stages classified into two levels as the following:

- **Competent practice ≥ 60% .**
- **In competent practice < 60% .**

Tool's reliability:

Cronbach's Alpha was used to determine the internal reliability of the tools.

Alpha Cronbach Reliability Analysis of the used Tool

Items	Alpha Cronbach
Knowledge Tool	0.856
Practice Tool	0.822

This table show Reliability in knowledge tool & practice tool when Alpha Cronbach was >0.5.

Tools validity:

Revision of the tools for clarity, relevance, comprehensiveness, understanding, and applicability was done by a panel of expertise composed of three professors of obstetrics and gynecological nursing to measure the content validity of the tools.

Ethical considerations:

 An official permission to conduct the proposed study was obtained from the scientific research ethics committee Faculty of Nursing Helwan University. Participation in the study was voluntary and nurses were given complete full information about the study and their role. The researcher obtained written informal consent from nurses. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not be

3899

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs were respected.

Preparatory phase:

It included reviewing of past, current, national and international related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

Pilot study:

The pilot study was done on 10% of the sample (5) nurses to examine the clarity of questions and feasibility and applicability of the tools and the time needed to complete the study tools. Based on the results, no modifications done so nurses included in the study.

Field work:

After official permission obtained from previously mentioned settings. The process of data collection was carried out in the period from the beginning of January 2022 and completed by end March 2022. The average time spent to fill in the tools was 30 minutes for the self-administered questionnaire, 20 minutes for knowledge assessment, and 45 minutes for the observational checklists. The researcher attended the previous mentioned study setting 2 days per week alternatively between day and night shifts.

Assessment:

- The researcher explained the aim of the study and obtaining a written consent from the studied sample to participate in the study.
- Pre-test knowledge assessment interviewing questionnaire was applied to assess the maternity nurses' knowledge about normal labor stages.
- Fulfilling of the pretest consumed 30 minutes by the nurse.
- Assessment phase help the researcher to keep the base line of nurse's knowledge of normal labor stages.

Planning:

This phase was aimed at planning for instructional guidelines through:

- Assessed maternity nurse's knowledge and practice educational needs.
- Setting educational objectives.
- Determined learning content of the instructional guidelines.
- Preparing the educational activities.
- Designing the methodology and media.
- Determined evaluation tools.

Implementation:

- Implementation of the instructional guidelines conducted in 4 sessions. The time of each session ranged between 30-45minutes, according to the nurses' needs and circumstances of the group work.
- Nurses divided into groups. and each group involved between 7 and 10 nurses. Work time table for each group was scheduled over one month, divided as follows:
- ➢ First week for theoretical part.
- ➢ Second week for the practical part.
- ➢ Third week for clinical supervision.
- ➢ Fourth week for post-test evaluation
- ➢ For each group, the training instructional guidelines was containing theoretical part.

3900

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

- ➢ The theoretical part of instructional guidelines was conducted into 2 sessions in the form of lecture session, PowerPoint presentation, Video and group discussion session for one week.
- Each session started with a recapping of what had been given through the previous sessions and the objectives of the new one.
- The researcher maintained simple language to meet nurses' level of understanding and researcher was very open to their questions and allowed them to express their thoughts effectively. The researcher was very careful for solicited feedback form nurses on timely manner.
- The researchers handed an interactive educational kit to nurses for further reading and understanding.

Evaluation

- **Post instructional guidelines 's evaluation of Nurses' performance**

The researcher used posttest knowledge assessment interviewing questionnaire to assess nurses' knowledge and observational checklist to assess nurses' practice about normal labor stages at the fourth week of the scheduled month.

Administrative item;

Approval to carry out this study was obtained from Dean of Faculty of nursing, Helwan University. An official letter from the responsible authorities at the Faculty of Nursing Helwan University was directed to the heads of the pre-mentioned Hospital for conducting the study.

Statistical item;

The collected data were revised, coded, and Statistical presentation and analysis were conducted using the Statistical Package for Social

Science (SPSS) version 25. Data were presented using descriptive statistics in the form of frequencies and percentage for categorical data, the arithmetic mean (X) and standard deviation (SD) for quantitative data. Chi-square test was used to compare between groups in qualitative, linear correlation coefficient was used for detection of correlation between two quantitative variables in one group.

Results:

Table 1: Distribution of the studied nurses according to their general characteristics (N=50).

general characteristics	N	%
Age (years)		
<20	1	2
20- <25	11	22
25- <30	16	32
≥30	22	44
Mean ±SD	28.54±4.62	
Place of work		
Fayoum General Hospital	34	68
Senoras Central Hospital	16	32
Level of Education		
Secondary School of Nursing	12	24
Technical Institute of Nursing	31	62
Bachelor of nursing	6	12
Postgraduate studies	1	2
Years of experience		
<1	5	10
1- <3	7	14
3- <5	13	26
5 or more	25	50
Mean ±SD	4.06±2.86	
Training courses regarding the stages of normal labor		

3901

Yes		40	80
No		10	20

Table (1): This table showed the general characteristics of the studied nurses. It was found that less than half of the studied nurses (44%) were in age group more than 30 years old with mean±SD30.53±6.21 year. Regarding the educational level, the current study revealed that about two thirds of the studied nurses (62%) had technical institute of nursing. Concerning to the years of experience the results revealed that half of the studied nurses (50%) had from 5 or more years' experience with Mean±SD4.06±2.86.

Table2: Distribution of studied nurses according to their knowledge regarding the management of normal labor (pre/ post instructional guidelines) (N= 50):

Normal labor	Pre						Post						Chi-square	
	Correct & complete		Correct & incomplete		Don't know		Correct & complete		Correct & incomplete		Don't know			
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value
Definition of normal labor.	7	14	13	26	30	60	39	78	8	16	3	6	45.54	<0.001*
Definition of prolonged labor	6	12	7	14	37	74	44	88	5	10	1	2	63.32	<0.001*
Definition of precipitate labor	5	10	10	20	35	70	45	90	3	6	2	4	65.20	<0.001*
Definition of premature labor	4	8	13	26	33	66	43	86	3	6	4	8	61.34	<0.001*
Definition of true Labor Pain.	7	14	7	14	36	72	38	76	5	10	7	14	41.25	<0.001*
Site of True Labor Pain.	7	14	12	24	31	62	40	80	4	8	6	12	44.06	<0.001*

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 2: This reveals that there was highly statistical difference between pre/ post instructional guidelines test score in all answers regarding studied nurse's knowledge about the management of normal labor as during pretest about three quarter of studied nurses (74 %) didn't know correct answer about definition of prolonged labor. While posttest noticed that that most of the studied nurses (90%) had correct & complete answer about definition of precipitate labor.

3902

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Table3: Distribution of studied nurses according to their knowledge regarding the management of first stage of labor (pre/ post instructional guidelines) (N= 50):

First stage of labor	Pre						Post						Chi-square	
	Correct & complete		Correct & incomplete		Don't know		Correct & complete		Correct & incomplete		Don't know			
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value
Definition of show.	5	10	16	32	29	58	42	84	7	14	1	2	58.78	<0.001*
Importance of Uterine Contractions	10	20	7	14	33	66	41	82	5	10	4	8	41.91	<0.001*
Definition of cervical effacement and dilatation.	8	16	10	20	32	64	45	90	4	8	1	2	57.52	<0.001*
Definition frequency of contraction.	11	22	9	18	30	60	43	86	6	12	1	2	46.69	<0.001*
Definition of the time from starting one contraction to its end.	12	24	7	14	31	62	41	82	5	10	4	8	37.03	<0.001*
Definition of the intensity of uterine contraction.	8	16	10	20	32	64	44	88	4	8	2	4	53.97	<0.001*

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table3: This reveals that there was highly statistical difference between pre/ post instructional guidelines test score in all answers regarding studied nurses' knowledge about the management of first stage of labor as during pretest about two thirds of studied nurses (66 %) didn't know correct answer about importance of uterine contractions. While posttest noticed that the most of the studied nurses (90%) had correct & complete answer about definition of cervical effacement and dilatation.

3903

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Table 4: Distribution of studied nurses according to their knowledge regarding the management of second stage of labor (pre/ post instructional guidelines) (N= 50):

Second stage of labor	Pre						Post						Chi-square	
	Correct & complete		Correct & incomplete		Don't know		Correct & complete		Correct & incomplete		Don't know			
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value
Definition of second stage of labor.	9	18	4	8	37	74	42	84	6	12	2	4	53.16	<0.001*
Nursing management of second stage of labor.	8	16	7	14	35	70	43	86	4	8	3	6	51.79	<0.001*
Signs of the second stage of labor	7	14	9	18	34	68	40	80	6	12	4	8	47.45	<0.001*

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 4: This reveals that there was highly statistical difference between pre/ post instructional guidelines test score in all answers regarding studied nurses's knowledge about the management of second stage of labor as during pretest about three quarter of studied nurses (74 %)didn't know correct answer about definition of second stage of labor. While posttest noticed that more than three quarter of studied nurses(86%) had correct & complete answer about nursing management of second stage of labor.

Table 5: Distribution of studied nurses according to their knowledge regarding the management of third stage of labor (pre/ post instructional guidelines) (N= 50):

Third stage of labor	Pre						Post						Chi-square	
	Correct & complete		Correct & incomplete		Don't know		Correct & complete		Correct & incomplete		Don't know			
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value
Definition of third stage of labor.	11	22	9	18	30	60	43	86	5	10	2	4	44.61	<0.001*
Time of giving Oxytocin or Methargin to the women as doctor order.	7	14	15	30	28	56	43	86	4	8	3	6	52.45	<0.001*
Signs of placental separation	9	18	4	8	37	74	38	76	7	14	5	10	43.09	<0.001*
Nursing management of third stage of labor.	5	10	15	30	30	60	42	84	5	10	3	6	56.22	<0.001*
Signs of retained Placenta.	10	20	6	12	34	68	45	90	4	8	1	2	53.79	<0.001*

3904

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 5: This reveals that there was highly statistical difference between pre/ post instructional guidelines test score in all answers regarding studied nurses' knowledge about the management of third stage of labor as during pretest about three quarter of studied nurses (74 %) didn't know correct answer about signs of placental separation. While posttest noticed that the most of the studied nurses (90%) had correct & complete answer about signs of retained Placenta.

Table 6: Distribution of studied nurses according to their knowledge regarding the management of fourth stage of labor (pre/ post instructional guidelines) (N= 50):

Fourth stage of labor	Pre						Post						Chi-square	
	Correct & complete		Correct & incomplete		Don't know		Correct & complete		Correct & incomplete		Don't know			
	N	%	N	%	N	%	N	%	N	%	N	%	X^2	P-value
Definition of fourth stage of labor.	5	10	11	22	34	68	41	82	4	8	5	10	53.0	<0.001*
Normal range of amount of missed blood after labor.	8	16	4	8	38	76	34	68	16	32	0	0	58.74	<0.001*
Complications after labor	5	10	11	22	34	68	39	78	7	14	4	8	50.85	<0.001*
Nursing management of fourth stage of labor.	8	16	9	18	33	66	42	84	6	12	2	4	51.18	<0.001*

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 6: This reveals that there was highly statistical difference between pre/ post instructional guidelines test score in all answers regarding studied nurses' knowledge about the management of third stage of labor as during pretest about three quarter of studied nurses (76 %) didn't know correct answer about normal range of amount of missed blood after labor. While posttest noticed that more than three quarter of studied nurses (84%) had correct & complete answer about nursing management of fourth stage of labor.

3905

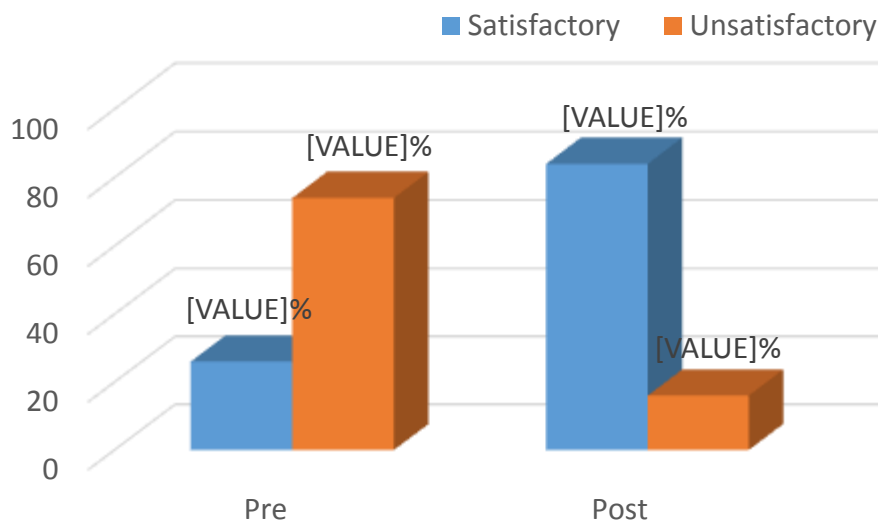Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Figure 1: Distribution of studied nurses according to their Total knowledge regarding the management of normal labor stages (pre/ post instructional guidelines) (N= 50).

Figure 1: Illustrated the total knowledge regarding the management of normal labor stages and as it indicated that about three quarter of the studied nurses (74%) had unsatisfactory knowledge level regarding management of normal labor stages during pretest while more than three quarter of them (84) had satisfactory knowledge level during posttest.

Table 7: Distribution of studied nurses regarding management of first stage of labor (pre/ post instructional guidelines) (N = 50 nurses)

First Stage of Labor	Pre				Post				Chi-square	
	Done		Not Done		Done		Not Done			
	N	%	N	%	N	%	N	%	X^2	P-value
Welcome and greet the expected mother.	22	44	28	56	40	80	10	20	13.75	<0.001*
Fill the admission card information.	15	30	35	70	42	84	8	16	29.74	<0.001*
Ensure privacy.	18	36	32	64	40	80	10	20	19.87	<0.001*
Hand hygiene before each procedure.	20	40	30	60	42	84	8	16	20.54	<0.001*
Obtain the history.	18	36	32	64	41	82	9	18	21.87	<0.001*
Differentiate between true and false labor pain.	16	32	34	68	39	78	11	22	21.37	<0.001*
Record time, color, odor and consistency of membranes if ruptured.	12	24	38	76	42	84	8	16	36.23	<0.001*
Measure vital signs.	20	40	30	60	43	86	7	14	22.69	<0.001*
Perform Leopold's maneuver.	11	22	39	78	40	80	10	20	33.65	<0.001*
Assess and record fetal heart rate.	10	20	40	80	38	76	12	24	31.41	<0.001*
Assess uterine contraction.	9	18	41	82	41	82	9	18	40.96	<0.001*
Obtain blood sample for lab investigation.	15	30	35	70	42	84	8	16	29.74	<0.001*
Encourage the woman to empty her bladder.	17	34	33	66	39	78	11	22	19.64	<0.001*
Administer intra venous fluids& drugs as ordered.	16	32	34	68	37	74	13	26	17.70	<0.001*
Identify deviations from normal through partograph.	13	26	37	74	43	86	7	14	36.53	<0.001*
Record & report during the progress of labor with the partograph findings.	17	34	33	66	38	76	12	24	17.82	<0.001*

*Statically significance: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

3906

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Table 7: It is revealed from the results that more than three quarter of the studied nurses (82%) didn't assess uterine contraction &fetal heart rate during first stage of labor at pretest of instructional guidelines while that more than three quarter of the studied nurses (86%) measured vital signs and the same percentage of them Identify deviations from normal through partograph during first stage of labor at posttest of instructional guidelines.

Table 8: Distribution of studied nurses regarding management of second stage of labor (pre/ post instructional guidelines) (N = 50 nurses)

Second Stage of Labor	Pre				Post				Chi-square	
	Done		Not Done		Done		Not Done			
	N	%	N	%	N	%	N	%	X^2	P-value
Check good place, light, and complete equipment.	9	18	41	82	41	82	9	18	40.96	<0.001*
Put mother in lithotomy position.	12	24	38	76	43	86	7	14	38.83	<0.001*
Identify signs of starting second stage of labor.	16	32	34	68	45	90	5	10	35.35	<0.001*
Explain procedure to the mother, teach her to push down during contraction and take deep breathing in between.	8	16	42	84	40	80	10	20	41.03	<0.001*
Scrubbing, growing and gloving.	14	28	36	72	40	80	10	20	27.21	<0.001*
Prepare sterile instruments table.	13	26	37	74	44	88	6	12	39.21	<0.001*
Perform perineal care.	15	30	35	70	36	72	14	28	17.65	<0.001*
Apply draping to the mother.	19	38	31	62	38	76	12	24	14.73	<0.001*
Follow up mother progress by P. V	12	24	38	76	37	74	13	26	25.01	<0.001*
Evacuate mother's bladder by catheter.	16	32	34	68	42	84	8	16	27.75	<0.001*
Support perineum with sterile dressing and maintain good flexion of the fetal head.	18	36	32	64	40	80	10	20	19.87	<0.001*
Deliver head and expulsion of fetal body.	17	34	33	66	39	78	11	22	19.64	<0.001*
Clamp first cokher on the cord far from the mother at least 20cm.	14	28	36	72	46	92	4	8	42.67	<0.001*
Evacuate small segment toward neonate.	13	26	37	74	44	88	6	12	39.21	<0.001*
Clamp second cokher on cord far from the 1st about 10cm.	12	24	38	76	47	94	3	6	50.64	<0.001*
Cut cord between 2 cokhers downward.	9	18	41	82	42	84	8	16	43.58	<0.001*

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 8: The results revealed that more than three quarter of the studied nurses (84%) didn't explain procedure to the mother, didn't teach woman to push down during contraction and take deep breathing in between at the second stage of labor at pretest of instructional guidelines while that most of the studied

3907

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

nurses (94%) clamped second cokher on cord far from the first about 10cm at posttest of instructional guidelines.

Table 9: Distribution of studied nurses regarding management of third stage of labor (pre/ post instructional guidelines) (N = 50 nurses)

Third Stage of Labor	Pre				Post				Chi-square	
	Done		Not Done		Done		Not Done			
	N	%	N	%	N	%	N	%	X^2	P-value
Observe signs of placental separation.	10	20	40	80	45	90	5	10	49.50	<0.001*
Give oxytocin as order.	12	24	38	76	44	88	6	12	41.56	<0.001*
Gently expulsion of the placenta in a circular motion.	10	20	40	80	44	88	6	12	46.54	<0.001*
Observe the placental lobes to confirm that nothing is detached or retained.	18	36	32	64	42	84	8	16	24.00	<0.001*
Repair episiotomy and check for REEDA.	13	26	37	74	40	80	10	20	29.27	<0.001*
Ensure well contracted uterus.	10	20	40	80	39	78	11	22	33.65	<0.001*
Perform perineal care.	14	28	36	72	40	80	10	20	27.21	<0.001*
Collect equipment and instruments correctly.	8	16	42	84	41	82	9	18	43.58	<0.001*
Wash hands.	10	20	40	80	42	84	8	16	41.03	<0.001*
Change the expected mother gown and put her in a comfortable position.	9	18	41	82	38	76	12	24	33.76	<0.001*
Transfer the expected mother to the postnatal unit.	14	28	36	72	43	86	7	14	34.31	<0.001*
Prepare the delivery setting to new labor.	9	18	41	82	45	90	5	10	52.17	<0.001*
Report and record.	15	30	35	70	39	78	11	22	23.19	<0.001*

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 9: It is revealed from the results that more than three quarter of the studied nurses (84%) didn't collect equipment and instruments correctly after finish during the third stage of labor at pretest of instructional guidelines while that most of the studied nurses (94%) observed signs of placental separation and the same percentage of them prepare the delivery setting to new labor at posttest of instructional guidelines .

3908

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Table 10: Distribution of studied nurses regarding management of fourth stage of labor (pre/ post instructional guidelines) (N = 50 nurses)

Fourth Stage of Labor	Pre				Post				Chi-square	
	Done		Not Done		Done		Not Done			
	N	%	N	%	N	%	N	%	X^2	P-value
Prepare the necessary equipment and taken to the bedside table.	20	40	30	60	47	94	3	6	32.97	<0.001*
Greet the mother and explain the procedure.	21	42	29	58	45	90	5	10	25.67	<0.001*
Hand hygiene and wear gloves.	20	40	30	60	46	92	4	8	30.13	<0.001*
Keep mother's privacy.	23	46	27	54	43	86	7	14	17.83	<0.001*
Observe the vital signs regularly every 15 minutes at 1st hour then every 30 minutes at 2nd hour.	16	32	34	68	40	80	10	20	23.38	<0.001*
Help the mother to lie on her back with her knees slightly bent.	17	34	33	66	45	90	5	10	33.28	<0.001*
Massage the fundus using one hand and the other gloved hand lowered the perineal pad to assess the lochia flow in the pad.	11	22	39	78	43	86	7	14	41.22	<0.001*
Assess the fundal level, position, and size and consistency then massage as needed.	23	46	27	54	43	86	7	14	17.83	<0.001*
Support the uterus by cupping one hand against the lower uterine segment (just above the symphysis pubis).	19	38	31	62	40	80	10	20	18.23	<0.001*
Observe any vaginal bleeding every10 minutes (amount of blood not exceed 500cc).	17	34	33	66	42	84	8	16	25.84	<0.001*
Instruct women to empty bladder to prevent hinder of uterine contraction.	18	36	32	64	46	92	4	8	34.03	<0.001*
Observe the vulva and perineum spatially if there is episiotomy.	12	24	38	76	45	90	5	10	44.43	<0.001*
Provide hygiene to the mother &change her clothes.	16	32	34	68	47	94	3	6	41.23	<0.001*
Instruct the mother to start breast feeding.	17	34	33	66	48	96	2	4	42.24	<0.001*
Instruct the mother to relax & sleep.	13	26	37	74	45	90	5	10	42.04	<0.001*

3909

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Report and record.	21	42	29	58	43	86	7	14	21.01	<0.001*

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 10: Illustrates that there was highly significant between pre-post instructional guidelines regarding management of fourth stage of labor (P < 0.01). the results revealed that more than three quarter of the studied nurses (78%) didn't massage the fundus using one hand and the other gloved hand lowered the perineal pad to assess the lochia flow in the pad at the fourth stage of labor at pretest of instructional guidelines , while that most of the studied nurses (96%) instruct the mother to start breast feeding at posttest of instructional guidelines .
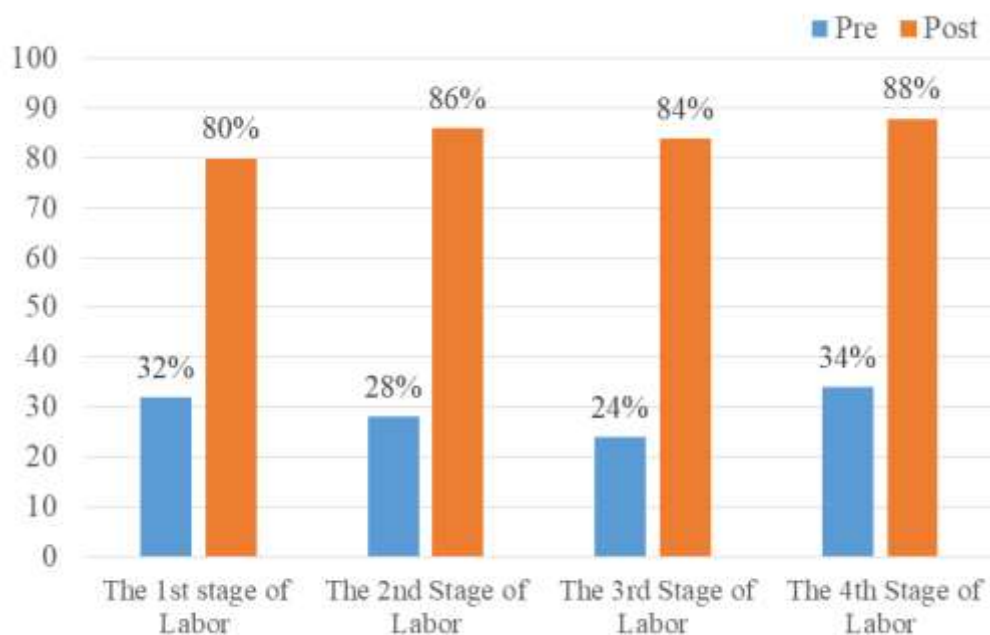
Figure 2: Distribution of studied nurses regarding Items of practice of the management of normal labor stages (N = 50 nurses).

Figure (2): Represented distribution of studied nurses regarding items of practice of the management of normal labor stages; it showed the percentages of studied sample pre& post instructional guidelines implementation and highly statistically significant improvement of her practice post implementation of instructional guidelines.

3910
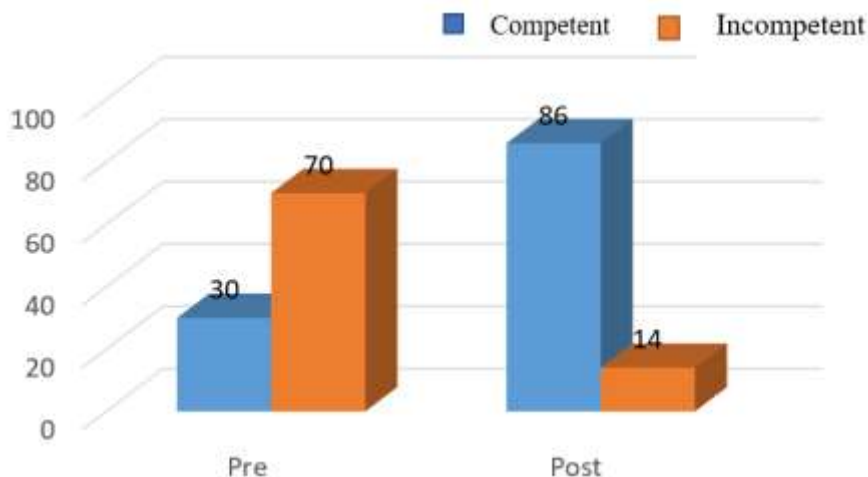
Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Figure 3: distribution of studied nurses regarding to their total practice of the management of normal labor stages (pre/ post instructional guidelines) (N = 50 nurses)

Figure 3: shows that there was highly statistically significant between pre and post instructional guidelines regarding total practice of the studied nurses management of normal labor stages with more than three quarter after instructional guidelines when p-value was <0.001*.

Table 11: Correlation between total knowledge score and total practice score (N = 50 nurses)

Total practice score	Total knowledge score	
	r	P-value
Pre test	0.893	<0.001*
Post test	0.912	<0.001*

Table 11: show that there was highly statistically significant and Positive correlation between total knowledge score and total practice score pre and post instructional guidelines when p-value was <0.001**

Table 12: Relation between general characteristics of the studied nurses and their total knowledge (pre and post instructional guidelines) (N = 50 nurses)

	Total knowledge											
	Pre						Post					
	Satisfactory		Unsatisfactory		Chi-square		Satisfactory		Unsatisfactory		Chi-square	
	N	%	N	%	X^2	P-value	N	%	N	%	X^2	P-value
age (years)												
<20	0	0.0	1	100.0	22.36	<0.001*	1	100.0	0	0.0	15.63	<0.001*
20- <25	0	0.0	11	100.0			5	45.5	6	54.5		
25- <30	0	0.0	16	100.0			15	93.8	1	6.3		
30 or more	13	59.1	9	40.9			21	95.5	1	4.5		
Place of work												
Fayoum	9	26.5	25	73.5	0.01	0.912	29	85.3	5	14.7	0.13	0.716
Senoras	4	25.0	12	75.0			13	81.3	3	18.8		
Level of Education												
Secondary School of Nursing	0	0.0	12	100.0	17.50	<0.001*	8	66.7	4	33.3	4.24	0.237
Technical Institute of	7	22.6	24	77.4			27	87.1	4	12.9		

3911

	N	%	N	%	X²	P-value	N	%	N	%	X²	P-value
Nursing												
Bachelor of nursing	5	83.3	1	16.7			6	100.0	0	0.0		
Postgraduate studies	1	100.0	0	0.0			1	100.0	0	0.0		
years of experience												
<1	0	0.0	5	100.0	17.57	<0.001*	2	40.0	3	60.0	15.73	<0.001*
1- <3	0	0.0	7	100.0			4	57.1	3	42.9		
3- <5	0	0.0	13	100.0			11	84.6	2	15.4		
5 or more	13	52.0	12	48.0			25	100.0	0	0.0		
Taken training courses regarding the stages of normal labor												
Yes	13	32.5	27	67.5	4.392	0.036*	36	90.0	4	10.0	5.36	0.021*
No	0	0.0	10	100.0			6	60.0	4	40.0		

***Statically significance**: $X2$ = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 12: This table reflected that there was statistically significant difference between total knowledge score of the studied nurses' pre and post instructional guidelines about management of normal labor stages and all demographic variables. Also, there was statistically significant difference between level of nurse's knowledge pre &post providing instructional guidelines.

Table 13: Relation between general characteristics of the studied nurses and their total practice pre and post instructional guidelines (N = 50 nurses)

	Total practice											
	Pre						Post					
	Done		Not done		Chi-square		Done		Not done		Chi-square	
	N	%	N	%	X^2	P-value	N	%	N	%	X^2	P-value
age (years)												
<20	0	0.0	1	100.0	15.88	<0.001*	1	100.0	0	0.0	11.63	0.009*
20- <25	1	9.1	10	90.9			6	54.5	5	45.5		
25- <30	1	6.3	15	93.8			15	93.8	1	6.3		
30 or more	13	59.1	9	40.9			21	95.5	1	4.5		
Place of work												
Fayoum	10	29.4	24	70.6	0.02	0.895	30	88.2	4	11.8	0.44	0.507
Senoras	5	31.3	11	68.8			13	81.3	3	18.8		
Level of Education												
Secondary School of Nursing	1	8.3	11	91.7	13.40	0.004*	8	66.7	4	33.3	5.35	0.148
Technical Institute of Nursing	8	25.8	23	74.2			28	90.3	3	9.7		
Bachelor of nursing	5	83.3	1	16.7			6	100.0	0	0.0		

3912

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

	n	%	n	%	X2	P-value	n	%	n	%	X2	P-value
Postgraduate studies	1	100.0	0	0.0			1	100.0	0	0.0		
years of experience												
<1	0	0.0	5	100.0	21.43	<0.001*	2	40.0	3	60.0	18.13	<0.001*
1- <3	0	0.0	7	100.0			4	57.1	3	42.9		
3- <5	0	0.0	13	100.0			12	92.3	1	7.7		
5 or more	15	60.0	10	40.0			25	100.0	0	0.0		
Taken training courses regarding the stages of normal labor												
Yes	15	37.5	25	62.5	5.357	0.021*	36	90.0	4	10.0	2.658	0.103
No	0	0.0	10	100.0			7	70.0	3	30.0		

***Statically significance**: X2 = Chi-Square Test   P-value: level of significance   P> 0.05 (non-significant) *P ≤ 0.05 (significant) **P < 0.01(Highly significant)

Table 13: show that There was high statistically significant between total practice pre instructional guidelines with Age and years of experience of the studied nurses when p-value <0.001*. While was statistically significant between total practice pre instructional guidelines with Academic qualification and training courses when p-value <0.05*.

- High statistically significant between total practice post instructional guidelines with years of experience when p-value <0.001*. While was statistically significant between total practice post instructional guidelines and age when p-value <0.05*.

Discussion:

In relation to general characteristics, the current study found that, less than half of the studied nurses were in age group more than 30 years old with mean±SD 30.53±6.21 years. This study was agreed with **Farahat et al., (2022)** in their recent study titled "Effectiveness of placental stage of labor care protocol program on performance of maternity nurses, Port Said, Egypt" and reported that more than one third of the studied nurses were in age group <30 years with mean±SD 30.10 ± 5.01. Contrariwise, this result was disagreed with *Abd-Elhakam & Salama, (2018)* who conducted a study entitled "Maternity nurses' performance regarding management of the intrapartum woman with cardiac disease in Banha, Egypt" and revealed that more than two thirds of the studied nurses were in age group <30 years with mean±SD 32.6± 4.53.

Regarding the educational level, the current study revealed that more than half of the studied nurses had technical institute of nursing. This study was similar to *Ohaeri et al., (2019)* who carried out a study entitled "Skilled health attendants' knowledge and practice of pain management during labor in health care facilities in Ibadan, Nigeria" and mentioned that two thirds of the studied nurses had technical nursing institute. Contrariwise, this study was dissimilar to *Chance et al., (2018)* who conducted a study entitled "Intrapartum nurse perception of labor support after implementation of the coping with labor algorithm in Milano, Italy" and found that less than one quarter of the studied nurses had technical institute of nursing.

Concerning to the years of experience the results revealed that half of the studied nurses had from 5 or more years' experience with Mean±SD 4.06±2.86. This finding on the same line with **Jumaah et al., (2020)** in their study entitled "Assessment of nurse-midwives' knowledge, and practice in delivery room at Al-Najaf city, Iraq" and reported that more than three quarters of the studied nurses had <5 years experiences with mean±SD 6.13±1.75. Contrariwise, this study in disagreement with *Page, (2020)* who carried out a study entitled "Improvement of nursing self-efficacy for labor support techniques and implementation of the

3913

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

coping with labor algorithm, USA" and mentioned that more than one third of the studied nurses had less than 5 years experiences.

In relation to nurses' knowledge about the management of normal labor stages (pre/ post), the present study stated that, about quarter of the studied nurses had complete correct answer about the definition of the time from starting one contraction to its end & about third of the studied nurses had incomplete correct answer about definition of show. As noticed that three quarter of the studied nurses had wrong answer about the normal range of amount of missed blood after labor during pretest. While posttest noticed that most of the studied nurses had complete correct answer about definition of precipitate labor, definition of cervical effacement and dilatation, and about signs of starting the labor. Also, about third of them had incomplete correct answer about normal range of amount of missed blood after labor and noticed that less than quarter of the studied nurses had wrong answer about the definition of true labor pain.

This study was supported by **Shokry et al., (2022)** in their recent study titled "Effect of supportive measures guidelines on nurses' practices during labor, Ain Shams, Cairo. Egypt" and reported that most of the studied nurses had correct answers regarding signs of true labor, mechanism and stages of normal labor post guidelines. Contrariwise, this finding was disagreed ***Kaur & Saini, (2020)*** who conducted a study entitled "Knowledge and practices regarding Partograph among staff nurses working in labor room, Amritsar, Punjab" and revealed that two thirds of the studied nurses had correct knowledge regarding definition of labor, physiology, signs of labor and stages of normal labor

Regarding total knowledge of the management of normal labor stages (pre/ post), the current study reported that, about three quarter of the studied nurses had unsatisfactory knowledge level regarding management of normal labor stages during pretest while more than three quarter of them had satisfactory knowledge level during posttest.

This result was similar to ***Sethi et al., (2019)*** who carried out a study entitled "Assessment of knowledge of evidence- based maternal and newborn care practices among midwives and nurses in six provinces in Indonesia" and revealed that about two thirds of the studied maternal nurses had unsatisfactory total knowledge level regarding labor, labor stages, labor care and management of intrapartum hemorrhage. Also, this study was agreed with **Farahat et al., (2022)** in their recent study titled "Effectiveness of placental stage of labor care protocol program on performance of maternity nurses, Port Said. Egypt" and mentioned that most of the studied nurses had satisfactory knowledge level regarding labor post program.

In relation to management of first stage of labor (pre/ post), the present study reported that, more than three quarter of the studied nurses didn't assess uterine contraction during first stage of labor at pretest while that more than three quarter of the studied nurses measured vital signs and the same percentage of them identify deviations from normal through partograph during first stage of labor at posttest.

This finding was supported by **Garbelli & Lira, (2021)** in their recent study titled "Maternal positions during labor: midwives' knowledge and educational needs in Northern Italy" and revealed that more than three fifth of the studied nurses had poor practice during first stage of labor regarding care of mother, assessing uterine contraction, evaluating fetus condition and partograph use. Also, this study on the same line with ***Murn, (2019)*** who conducted a study entitled "Mothering the mother: An Educational Program for Nurse-Provided Continuous Labor Support" and found that majority of the studied nurses had good practice regarding caring, assessment of mother and labor process during first stage labor.

Concerning management of second stage of labor (pre/ post), the constant study revealed that, more than three quarter of the studied nurses didn't explain procedure to the mother, didn't teach her to push down during contraction and take deep breathing in between at the second stage of labor at pretest while that most of the studied nurses clamped second cokher on cord far from the first about 10cm at posttest.

3914

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

This result was in agreement with **Dent et al., (2021)** in their recent study entitled "Improving Nurse Management of the Second Stage of Labor, Toronto" and reported that more than three quarters of the studied nurses weren't encouraged women in 2nd stage to bear down as she desire when fetal head is visible and not avoid manually stretching the perineum which improved post training program. Also, this finding was on the same line with **Leist-Smith et al., (2018)** who carried out a study entitled "Effectiveness of a Nurse-Driven, Second Stage Labor Management Protocol to Decrease Obstetric Birth Trauma, Ireland" and mentioned that more than half of the studied nurses had poor practice regarding management of second stage of labor which improved to become most of them had good practice level post implementation of management protocol.

Regarding management of third stage of labor (pre/ post), the present study reported that, more than three quarter of the studied nurses didn't collect equipment and instruments correctly after finish during the third stage of labor at pretest while that most of the studied nurses observed signs of placental separation and the same percentage of them prepare the delivery setting to new labor at posttest.

This study was similar to **Abdelwahed et al., (2022)** in their recent study titled "Effect of nursing care protocol on nurses' performance during third stage of labor, Egypt" and revealed that statistically significant improvements among nurses after implementation of the nursing protocol regarding performance towards third stage of labor, the improvement was more obvious in the items of delivery and examination of the placenta, care after delivering of placenta, documentation and infection control for place of delivery post labor. Also, this result on the same line with **Waghmare et al., (2019)** who conducted a study entitled "A protocol for improving nursing performance towards placental examination among staff nurses at the labor room in selected hospitals of Pune city" and represented that most of the nurses in the study had a low level of performance toward placenta, placental examination and care during third stage before participation in the protocol. But, a significant improvement was observed in nurses' performance regarding placental examination after implementing the program.

Concerning management of fourth stage of labor (pre/ post), the current study revealed that, about three quarter of the studied nurses didn't instruct the mother to relax & sleep at the fourth stage of labor at pretest, while that most of the studied nurses instruct the mother to start breast feeding at posttest.

This finding was supported by **Shahin et al., (2021)** in their recent study titled "Developing competences for maternity nurses during labor and immediate postpartum period regarding prevention of postpartum hemorrhage, Egypt" and found that most of the studied nurses were incompetent regarding care of mother during fourth stage and immediate Postpartum care which statistically significant improvement was observed post program implementation to majority of them had competent practice level during fourth stage of labor and immediate postpartum period.

Regarding items of practice of the management of normal labor stages, the current study represent that, the percentages of studied sample pre& post instructional guidelines implementation and highly statistically significant improvement of her practice post implementation of instructional guidelines.

This study was agreed with **Ahmed et al., (2019)** who conducted a study entitled "The impact of a nurse mentoring program on the quality of labor and delivery care at primary health care facilities in Bihar, India" and revealed that, there was an improvement in nurses' performance regarding four stages of labor and delivery care. Also, this finding was in agreement with **Murn, (2019)** who conducted a study entitled "Mothering the Mother: An Educational Program for Nurse-Provided Continuous Labor Support" and found that there was a statistically significant enhancement in nurses performance during labor from beginning to the end of labor post educational program.

3915

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Concerning total practice of the management of normal labor stages (pre/ post), the present study reported that, nearly three quarter of the studied nurses didn't perform total practice pretest while more than three quarter of studied nurses done total practice after instructional guidelines during posttest when p-value was <0.001*.

This result was agreed with **Shokry et al., (2022)** in their recent study titled "Effect of supportive measures guidelines on nurses' practices during labor, Egypt" and reported that more than two thirds of the studied nurses had incompetent practice pre supportive measures guidelines which improved post supportive measures guidelines implementation to most of them had competent practice level during labor. Also, this study on the same line with *Mohamed et al., (2022)* in their recent study titled "Effect of instructional guidelines regarding Uterotonic drugs administration on nurses' performance and labor outcome, Egypt" and represented that more than half of the studied nurses had good performance level post implementation of instructional guidelines.

Regarding total practice of the management of normal labor stages (pre/ post), the current study revealed that, there was highly statistically significant between pre and post instructional guidelines regarding total practice of the studied nurses management of normal labor stages with more than three quarter after instructional guidelines when p-value was <0.001*.

This study was agreed with *Mohamed et al., (2022)* in their recent study titled "Effect of instructional guidelines regarding Uterotonic drugs administration on nurses' performance and labor outcome, Egypt" and represented that there was highly statistically significant improvement in nurses' performance regarding labor care and labor outcome post implementation of instructional guidelines. Also, this study was in agreement with *Ahmed et al., (2019)* who carried out a study entitled "Effect of applying standards for labor and delivery nursing care on performance of nurses, Egypt" and revealed that there was improvement in achievements of performance standards for maternal and neonatal health: normal Labor and delivery (NLD) after application of this study immediately better than pre standards and total scores of nurses' performance were highly statistical significant difference was illustrated (p <0.001).

Concerning correlation between total knowledge score and total practice score, the current study reported that, there was highly statistically significant and positive correlation between total knowledge score and total practice score pre and post instructional guidelines when p-value was <0.001.

This result was supported by *Shahin et al., (2021)* in their recent study titled "Developing competences for maternity nurses during labor and immediate postpartum period regarding prevention of postpartum hemorrhage, Egypt" and found that there was strong positive correlation between nurses' total knowledge and total practice during labor and immediate postpartum period regarding prevention of postpartum hemorrhage pre and post program. Also, this study was agreed with *Sethi et al., (2019)* who carried out a study entitled "Assessment of knowledge of evidence- based maternal and newborn care practices among midwives and nurses in six provinces in Indonesia" and revealed that there was positive correlation between nurses' total knowledge and total practice.

Regarding relation between general characteristics of the studied nurses and their total knowledge (pre and post), the constant study represented that, there was statistically significant difference between total knowledge score of the studied nurses' pre and post about management of normal labor stages and all demographic variables. Also, there was statistically significant difference between level of nurse's knowledge pre &post providing instructional guidelines.

This study was in agreement with *Kaur & Saini, (2020)* who conducted a study entitled "Knowledge and practices regarding Partograph among staff nurses working in labor room, Amritsar, Punjab" and revealed that there was a statistically significant difference between studied nurses' total knowledge and their age,

3916

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

level of education, training courses and years of experiences. Contrariwise, this result was in disagreement with **Murn, (2019)** who conducted a study entitled "Mothering the mother: An Educational Program for Nurse-Provided Continuous Labor Support, USA" and found that there was no statistically significant difference between the studied nurses' total knowledge and their demographic data pot education program.

Concerning relation between general characteristics of the studied nurses and their total practice pre and post, the present study revealed that, there was high statistically significant between total practice pre with age and years of experience of the studied nurses. While was statistically significant between total practice pre with Academic qualification and training courses. High statistically significant between total practice post with years of experience. While was statistically significant between total practice post and age.

This study was similar to **Abdelwahed et al., (2022)** in their recent study titled "Effect of nursing care protocol on nurses' performance during third stage of labor, Port Said. Egypt" and revealed that there was a statistically significant difference between the studied nurses' total practice and their age, educational level, training programs and years of experiences post program implementation. Contrariwise, this finding was dissimilar to **Ahmed et al., (2019)** who conducted a study entitled "Effect of applying standards for labor and delivery nursing care on performance of nurses, Minia, Egypt" and reported that there was no statistically significant difference between total nurses' practice and their age, gender, educational level and years experiences pre standards implementation.

Conclusion

Considering the current study, there was highly statistically significant difference between the level of studied nurse's performance pre and post about management of normal labor stages and all demographic variables. Also, there was statistically significant difference between level of studied nurse's performance pre &post providing instructional guidelines. So instructional guidelines have positive effect on nurse's performance regarding management of normal labor stages and these results support the research hypothesis

Recommendation

Based on the findings of the present study, the following recommendations were suggested**:**

1. Development of educational sessions regarding management of normal labor to provide maternity nurses update in knowledge and practices.
2. Replicate this study by using larger samples of the population and include more than one hospital with different affiliations in different regions in Egypt in order to generalize the findings

Conflicts of Interest: The authors declare no conflict of interest.

References

Abd-Elhakam, E. M., & Salama, A. M. (2018): Maternity nurses' performance regarding management of the intrapartum woman with cardiac disease. International Journal of Studies in Nursing, 3(3), 60. doi:10.20849/ijsn.v3i3.498.

Abdelwahed, A., Abdelmoniem, E., & Farahat, F. (2022): Effect of nursing care protocol on nurses' performance during third stage of labor. Port Said Scientific Journal of Nursing, 9(1), 1-22. doi:10.21608/pssjn.2022.80517.1115.

Abdelwahed, A., Abdelmoniem, E., & Farahat, F. (2022): Effect of nursing care protocol on nurses' performance during third stage of labor. Port Said Scientific Journal of Nursing, 9(1), 1-22. doi:10.21608/pssjn.2022.80517.1115.

Abdelwahed, A., Abdelmoniem, E., & Farahat, F. (2022): Effect of nursing care protocol on nurses' performance during third stage of labor. Port Said Scientific Journal of Nursing, 9(1), 1-22. doi:10.21608/pssjn.2022.80517.1115.

3917

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919

Abdelwahed, A., Abdelmoniem, E., & Farahat, F. (2022): Effect of nursing care protocol on nurses' performance during third stage of labor. Port Said Scientific Journal of Nursing, 9(1), 1-22. doi:10.21608/pssjn.2022.80517.1115.

Ahmed, N. F., Mohasib, S. H., & Emam, E. A. (2019): Effect of applying standards for labor and delivery nursing care on performance of nurses. Minia scientific nursing journal , 003(1), 24-33. doi:10.21608/MSNJ.2018.187729.

Ahmed, N. F., Mohasib, S. H., & Emam, E. A. (2019): Effect of applying standards for labor and delivery nursing care on performance of nurses. Minia scientific nursing journal , 003(1), 24-33. doi:10.21608/MSNJ.2018.187729.

Ahmed, S., Srivastava, S., Warren, N., Mayra, K., Misra, M., Mahapatra, T., & Rao, K. D. (2019): The impact of a nurse mentoring program on the quality of labour and delivery care at primary health care facilities in Bihar, India. BMJ Global Health, 4(6), e001767. doi:10.1136/bmjgh-2019-001767.

Ajavon, D. R. D., Bassowa, A., Douaguibe, B., Ketevi, A. A., LogboAkey, K. E., Djalogue, L., ... & Aboubakari, A. S. (2021). Study of the Active Management of the Third Stage of Labor (AMTSL) in Four Maternity Hospitals in the Commune of Kara (Togo). Open Journal of Obstetrics and Gynecology, 11(9), 1151-1160.

Alatawi, M., Aljuhani, E., Alsufiany, F., Aleid, K., Rawah, R., Aljanabi, S., & Banakhar, M. (2020). Barriers of implementing evidence based practice in nursing profession: A literature review. American Journal of Nursing Science, 9(1), 35-42.

Alemu, B. W. (2021). Third stage of Labor Practice and Associated Factors among Skilled Birth Attendants Working in Gamo and Gofa Zone Public Health Facility, Southern, Ethiopia. Ethiopian Journal of Reproductive Health, 13(2), 1-10.

Caughey, A. B. (2020). Is Zhang the new Friedman: How should we evaluate the first stage of labor?. In Seminars in Perinatology (Vol. 44, No. 2, p. 151215). WB Saunders. doi. 10.1016/j.semperi.2019.151215

Chance, K. D., Jones, S. J., & Gardner, C. L. (2018): Intrapartum nurse perception of labor support after implementation of the coping with labor algorithm. The Journal of Perinatal Education, 27(3), 152-162. doi:10.1891/1058-1243.27.3.152.

Dent, M., Otterloo, L. V., & Brady, M. (2021): Improving Nurse Management of the Second Stage of Labor. Childbearing & newborns J, 50(5), 32-36. Retrieved from https://doi.org/10.1016/j.jogn.2021.08.045.

Esquinas-Requena, J. L., Lozoya-Moreno, S., García-Nogueras, I., Atienzar-Núñez, P., Sánchez-Jurado, P. M., & Abizanda, P. (2020). On the management of maternal pushing during the second stage of labor: a biomechanical study considering passive tissue fatigue damage accumulation. ORIGINAL RESEARCH OBSTETRICS, 52(7), 452-461. doi: 10.1016/j.ajog.2022.01.023.

Garbelli, L., & Lira, V. (2021): Maternal positions during labour: midwives' knowledge and educational needs in Northern Italy. Eur J Midwifery , 5(15). Retrieved from https://doi.org/10.18332/ejm/136423.

Ismail, A. A., Effat, D. M., Ebisy, H. A., & Farahat, A. M. (2020): Randomized Management of the Third Stage of Labor by Various Protocols in Parturients at Low-Risk of Postpartum Hemorrhage. International Journal of Obstetrics and Gynaecology Research (IJOGR). , 6(2020), 839-851.

Jumaah, Z. N., Hassan, M. B., & Abdulhussein, T. A. (2020): Assessment of nurse-midwives' knowledge, and practice in delivery room at Al-Najaf city. International Journal of Scientific and Research Publications (IJSRP), 10(2), p9886. doi:10.29322/ijsrp.10.02.2020.p9886.

Kaur, H., & Saini, P. (2020): Knowledge and practices regarding Partograph among staff nurses working in labor room. Nursing and Midwifery Research Journal. doi:10.33698/nrf0270.

Kaur, H., & Saini, P. (2020): Knowledge and practices regarding Partograph among staff nurses working in labor room. Nursing and Midwifery Research Journal. doi:10.33698/nrf0270.

Leist-Smith, M., Green, D., & Lipke, J. (2018): Effectiveness of a Nurse-Driven, Second Stage Labor Management Protocol to Decrease Obstetric Birth Trauma. The Association of Women's Health, Obstetric and Neonatal Nurses journal, 45(3), 23-28. Retrieved from https://doi.org/10.1016/j.jogn.2016.03.097.

Mohamed, M., Ahmed, M., Mohamed, M., & Gaheen, M. (2022): Effect of instructional guidelines regarding Uterotonic drugs administration on nurses' performance and labor outcome. Tanta Scientific Nursing Journal, 25(2), 12-47. doi:10.21608/tsnj.2022.233481.

Murn, N. L. (2019): Mothering the mother: An Educational Program for Nurse-Provided Continuous Labor Support. J Perinat Educ, 28(4), 199–209.. doi:10.1891/1058-1243.28.4.199.

3918

Ohaeri, B., Owolabi, G., & Ingwu, J. (2019): Skilled health attendants' knowledge and practice of pain management during labour in health care facilities in Ibadan, Nigeria. European Journal of Midwifery, 3(February). doi:10.18332/ejm/99544.

Page, K. (2020): Improvement of nursing self-efficacy for labor support techniques and implementation of the coping with labor algorithm. Journal of Obstetric, Gynecologic & Neonatal Nursing, 49(6), S44. doi:10.1016/j.jogn.2020.09.076.

Ramadhani, F. B., Liu, Y., & Lembuka, M. M. (2020). Knowledge and barriers on correct use of modified guidelines for active management of third stage of labour: a cross sectional survey of nurse-midwives at three referral hospitals in Dar es Salaam, Tanzania. African Health Sciences, 20(4), 1-10.

Sethi, R., Tholandi, M., Amelia, D., Pedrana, A., & Ahmed, S. (2019): Assessment of knowledge of evidence-based maternal and newborn care practices among midwives and nurses in six provinces in Indonesia. International Journal of Gynecology & Obstetrics, 144(S1), 51-58. doi:10.1002/ijgo.12735.

Sethi, R., Tholandi, M., Amelia, D., Pedrana, A., & Ahmed, S. (2019): Assessment of knowledge of evidence-based maternal and newborn care practices among midwives and nurses in six provinces in Indonesia. International Journal of Gynecology & Obstetrics, 144(S1), 51-58. doi:10.1002/ijgo.12735.

Shahin, M. A., Desoky, M. D., & Salim, H. M. (2021): Developing competences for maternity nurses during labor and immediate postpartum period regarding prevention of postpartum hemorrhage. Egyptian Journal of Health Care, 12(4), 618-634. doi:10.21608/ejhc.2021.203213.

Shahin, M. A., Desoky, M. D., & Salim, H. M. (2021): Developing competences for maternity nurses during labor and immediate postpartum period regarding prevention of postpartum hemorrhage. Egyptian Journal of Health Care, 12(4), 618-634. doi:10.21608/ejhc.2021.203213.

Sharifi, N., Bahri, N., Hadizadeh-Talasaz, F. et al. (2022): A randomized clinical trial on the effect of foot reflexology performed in the fourth stage of labor on uterine after pain. BMC Pregnancy Childbirth ,22, 57 (2022). doi: 10.1186/s12884-022-04376-w.

Shokry, S., Shabana, K. A., Farouk, O., & Mohamed, R. (2022): Effect of supportive measures guidelines on nurses' practices during labor. Open Journal of Obstetrics and Gynecology, 12(05), 482-497. doi:10.4236/ojog.2022.125042.

Tih, W. N., Thomas, E. O., & Nicholas, T. (2021). Active management of the third stage of labour: knowledge and challenges of obstetric caregivers in selected health facilities in Fako Division, Cameroon. doi: 10.21203/rs.3.rs-957780/v1 .

Tolera, B. D., & Feng, H. (2017). Assessment of attitudes, skills and source of knowledge on utilization of EBP among registered nurses in Xiangya Hospital of Central South University, Changsha, China. Am J Nursing Sci, 6(2), 99-112.

Waghmare, S. V., Upendra, S., Devi, A. S., Kaur, J., Barde, S., & Joshi, S. (2019): A protocol for improving nursing performance towards placental examination among staff nurses at the labor room in selected hospitals of Pune city. Indian Journal of Public Health Research & Development, 10(7), 1630. doi:10.5958/0976-5506.2019.01831.x

World Health Organization (2018) WHO Recommendations: Intrapartum Care for a Positive Child Birth Experience. Sexual and Reproductive Health. WHO/RHR/18.12, Geneve, 8 p.

World Health Organization. (2019). Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division.

Yaseen , S., Fatima, S., Ramzan,U., Quasar ,R.,&Ara,S.(2021):Knowledge and Practice of Active Management of Third Stage of Labour (AMTSL) among Nurses Working in Selected Hospitals of Kashmir . International Journal of Creative Research Thoughts (IJCRT),9 (2),1-7.

3919

Eur. Chem. Bull. 2023, 12(Regular Issue1), 3896-3919