Effect of Maternity Nurses Knowledge and Practices Regarding the Medication Errors on Laboring Women Safety in Labor Unit

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Abstract

Background: Women's safety and quality of care are essential aspects of clinical nursing practice. Medication administration errors are considered to be a global problem resulting in an increase in mortality rates, length of hospital stay, and related costs. **Aim of the study** to assess the effect of maternity nurse's knowledge, and Practices regarding the medication errors on laboring women safety in labor unit. **Design**: A descriptive research design was used in this study in labor unit. **Setting**: The study was conducted at the maternity departments of University hospital, General hospital (Alnubui Almuhandis) and Tamia hospital at Fayoum city. **Sample:** Convenience sample technique was utilized in the present study to recruit 40 nurses. **Tools**: Three tools for data collection. **First tool:** Self-administered questionnaire sheet which used to assess: personal data of the studied sample nurse's knowledge related to specified obstetric medication and precautions of medications administration. **Second tool**: Factors that influence medication errors from the nurse's point of view. **Third tool:** An Observational Checklist: to assess the maternity nurse's practices related to obstetric medication administration and errors. **Result**: the present study showed that the total score of maternity nurse's knowledge regarding medication administration in labor unit was, slightly more than half of the studied sample had incomplete satisfactory knowledge. On the other hand the total score of maternity nurse's practices related to medication administration was, slightly less than half of the studied sample had complete satisfactory level of practices regarding medication administration, moreover, there was significant relationship between level knowledge and practices. **Conclusion**: Slightly more than half of the studied nurse's had incomplete satisfactory knowledge regarding medication administration in labor unit. While, slightly less than half of the studied nurse's had an complete satisfactory level of practice regarding medication administration in labor unit. **Recommendation**: in service training programs is required for maternity nurses regarding medication errors and how to overcome it.

Key words: Knowledge, Practice, Medication errors, Women safety.

Introduction

Patient safety is the freedom from accidental or preventable injuries produced by medical care, patient safety can be affected as a result constellation of different factors and circumstances. Patient safety is one of the most serious healthcare challenges in the world, therefore reducing medication errors and improving patient safety is a priority. Merely counting medication errors will not lead to significant improvements in reducing medication errors. (**Rahimi et al., 2017).**

Medication errors have been identified as the most common type of errors affecting patient safety and the most common single preventable cause of adverse events.

Medication errors are multidisciplinary in nature and include prescribing, dispensing and administration errors that result in incorrect medications, administration routes, doses, inappropriate continuation of medications, omission of doses or administering medications to patients despite knowing that they are allergic to the medication (**You, 2015)**.

The medication administration process (MAP) is a complex process and multistage practice in hospital settings. MAP plays a central role in nursing and is mostly managed by nurses, except prescribing that is conducted by the physician. The complexity of the MAP exposes risk to medication errors that are surprisingly common and costly, administering medicines requires theoretical and clinical medication competence. In depth knowledge of medicine includes pharmacodynamics, therapeutic use, side effect, adverse event and appropriateness of administration the medication considering the patient's current response to treatment **(Pirinen, Salantera, Kauhanenl, Lilius, 2015)**.

Every nurse administers an average of 10 medication doses for every hospital women every day. The volume and complexity of medication administration contribute to the risk of medication errors. All hospitalized women's will be exposed to a minimum of one medication error each day they're hospitalized nurses need to recognize the challenges they face when administering medications to their Women's. Because nurses consistently administer medications, they're well positioned to prevent medication errors. Nurses must be prepared to not only catch their own errors, but also the errors of health care providers, pharmacists, and others in the chain of medication administration **(Durham, 2015).**

The top 10 medications associated with obstetric medication errors were ampicillin, Oxytocin, magnesium sulfate, Ibuprofen, Cefazolin, Oxycodone, acetaminophen, Ketorolac, Terbutaline, Gentamicin, and Meperidine. The most common obstetric medication associated with harm was Oxytocin. These indicate that obstetric and perinatology practitioners must be fully aware of safe medication use, despite its complexity, to avoid any harm to the mother or fetus/newborn. **(Kfuri, et al., 2008).**

After a medication error occurs, the nurse is usually blamed more than any other health professionals. This is due to the fact that a nurse administers most of the medications and spends 40% of their time on administering medications, in hospitals. Direct effects of a medication error may be life threatening or may lead to an increased financial cost. Moreover, occupational injuries among nurses and mistrust of nursing staff are the indirect effects. In some studies, insufficient drug information and weaknesses in continuing educations have been mentioned as the main causes of medication errors (**Shohani & Tavan, 2018)**.

Nurses need to recognize the challenges that they face when administering medications to their patients. Because nurses consistently administer medications, they're well positioned to prevent medication errors. Nurses must be prepared to not only catch their own errors, but also the errors of health care providers, pharmacists, and others in the chain of medication administration **(Durham, 2015).**

The protective measures against medication errors are related to the preparation and administration of medications, the dosing calculation skills of nurses, the nursing education, the oral medication orders, the interdisciplinary collaboration, the manager nurses and changes in health systems' issues relevant to medication management **(Athanasakis, 2014).**

Significance of the study

Unsafe medication practices and medication errors are a leading cause of injury and avoidable harm in health care systems across the world. Globally, the cost associated with medication errors has been estimated at $42 billion annually according to world health organization **(WHO, 2016).**

Errors in the provision of care are too common. These errors may lead to: injuries to mothers or their babies, higher costs to treat associated complications, and medical-legal suits that can entangle both clinicians and plaintiffs for years **(Koren, 2011**).

According to prospective observational study included 10 000 women who presented at the obstetric emergency ward, department of obstetrics and gynecology, Menofyia University Hospital, Egypt find that a total of 1976 medication errors were detected. Three administration errors resulted in three Cesarean section because fetal distress that result from wrong doses of oxytocin infusion so the presented study done to spotlight on the effect of nurses knowledge and practices on medication error **(Kandil et al., 2012).**

Aim of the Study:

The study was aimed at assessing the effect of maternity nurses knowledge, and practices regarding the medication errors on laboring women safety in labor unit.

This aim was attained through:

1- Identify knowledge of maternity nurses about Medication error in labor unit

2- Identify Practice of maternity nurses about Medication error in labor unit

Research Questions:

- What is the knowledge of maternity nursing staff regarding the (Medication error) on women safety?
- What is the practice of maternity nursing staff regarding the (Medication error) on women safety?

Subjects and Methods:

1) The technical design:

A) Research design:

A descriptive research design was used to achieve the objective of the study.

B) Setting:

The study was conducted at the maternity departments of University hospital, general hospital (Alnubui Almuhandis) and Tamia hospital at Fayoum city.

C) Subjects:

Sample types and size:

Convenience sample technique was utilized in the present study. The study was included all nurses from the previous mentioned settings. The total numbers of nurses were 40 maternity nurses working in the maternity departments.

D) Tools for data Collection:

Two tools were used for data collection in the present study as the following:

I. Tool I: Self-administered questionnaire sheet (structured interviewing questionnaire)

A structured Arabic self-administered questionnaire sheet was designed by the researcher, after reviewing the related current

and previous literature, to collect data which cover the aim of the study, and **it consists of three parts as follows:**

The first part: It was consisted of **five** questions and used to assess the nurses' personal data of the study sample as; age, educational level, experience and source of knowledge regarding women's safety.

The Second part: It was consisted of **fourteen** questions in the form of multiple choice questions (MCQs). It was used to assess the nurse's knowledge related to specified obstetric medication; (indication, side effect and nursing role), also this part contain questions related to types of medication errors in labor unit.

The researchers focus on the most common medication used in the labor unit as the following: Oxytocin, Misoprostol, Methergine, Anesthetic drugs, Magnesium sulfate, Antibiotics, Analgesic.

The third part: It was consisted of **Three** questions regarding precautions of administrating medications such as; medication rights and the role of the nurse and women to prevent medication errors.

Scoring System for the second and third part in Self-administered questionnaire sheet:

All knowledge variable were weighted according to items included in each question, each item was given a score (3) when the answer was correct answer, score (2) when the answer was incomplete, correct answer and score (1) when the answer was wrong or no answer. The total scores of nurses' knowledge were (51) score classified as the following;

- Unsatisfactory knowledge (1-17) scores.
- Incomplete satisfactory knowledge (18-34) scores.
- Complete satisfactory knowledge (35-51) scores.

II. Tool II: It was consisted of **Eighteen:**

questions which used to assess the maternity nurses' knowledge regarding the factors that influence medication errors from the nurse's point of view, in the form of true or false answer.

- **Scoring System:**

The answer for this part ranged from (Yes) answer was considered as correct answer and scored as (2) and the (No) answer considered as wrong answer and scored as (1). The total scores for the nurses' knowledge regarding the factors that influence medication errors from the nurse's point of view were (36) score divided into two levels;

-Unsatisfactory knowledge (1-18) scores.
-Satisfactory knowledge (19-36) scores.

III.Tool III: An Observational Checklist: (Appendix III):

This tool was adapted from **(Wilkinson et al., 2016)** and translated into Arabic language, then modified by the researcher to be more suitable to the obstetric area. It consisted of **Fifty Five** items, used to assess the maternity nurse's practice related to Obstetric medication administration and errors.

- **Scoring System for the observational checklist**:

All practice variable were weighted according to items included in each question each item was given a score (3) for done step, score (2) for not done but know step, correct answer and score (1) for not done and didn't know step. The total scores of observational checklist were (165 marks) score classified as

the following;

Tools validity and reliability:

The data collection tools were reviewed by a panel of three experts in maternal and newborn health nursing field to test the face and content validity. Each of the experts was asked to examine tools for content coverage, clarity, wording, length, format and overall appearance. Modifications were done according to the comments "rephrasing for three questions". Cronbach Alpha coefficient test was used to measure the internal consistency of the tools used in the current study, the result as the following; 1st tool (0.85), 2nd tool 0.91.

Ethical consideration:

The researcher approval was obtained from a scientific, ethical committee in the faculty of nursing, Helwan University before starting the study. The researcher was obtained oral consent from maternity nursing staff in the prementioned setting. The researcher clarified the objectives of the study to nurses included in the study. The researcher was assured anonymity and confidentiality of subject's data. Nurses were informed that they are allowed to choose to participate or not in the study and that they have the right to withdraw from the study at any time. When researcher detects any error she tried to stop it by talk with the nurse, if the nurse not response the researcher was reported to the matron or a doctor.

II. Administrative design:

Official letters, including the title and purpose of the study were issued from the faculty of Nursing Helwan University and submitted to the Director of the pre-mentioned Hospitals for conducting the study.

III. Operational design:

The study, to be completed, has passed through different phases as follows: the preparatory phase, then the pilot study phase and lastly the field of work phase.

Preparatory phase:

During this phase the researcher reviewed the current, local and international related literature using books, periodicals journals, magazines and internet. This helped the researcher to be more acquainted with the study, and with the process of tools' designing. Then tools were designed and tested for being valid and reliable.

Pilot study:

A pilot study was carried out on 10% (4 nurses) of the total sample size to evaluate the validity and reliability and to check the practicability of data collection tools and find out the possible obstacles or problems that might be faced by the researcher and interfere with data collection. Minor modifications were needed on tools of data collection based on the finding of pilot study. Nurses included in the pilot study were excluded from the main study sample.

Field work:

The process of data collection was carried out in the period from the beginning of April and completed by the June. The researcher attended the prementioned setting to collect data till the sample size reached the pre-determined number. The researcher introduced herself to maternity nursing staff and the approval of nurses was obtained orally after explaining the purpose of the study and try to establish a trustful relationship. Then the researcher started the assessment process sometimes individually and other time in groups according the nurses free time, this process conducted in nurses' staff room in the

hospitals. This sheet was filled by each nurse through (10-15) minutes.

Then the researcher attained the morning shift with the maternity nurses in labor unit to fill **the observational checklist (tool III.)** which specify to related to medication administration and errors practice. The time taken to complete this checklist was 20 to 25 minutes. When researcher detects any error she tried to stop it by talk with the nurse, if the nurse not response the researcher reported to the matron or a doctor.

IV. Statistical design:

Data entry was done using Epi-Info 6.4 computer software package, while statistical analysis was done using the Statistical Package for the Social Sciences "SPSS" version 18. Quality control was done at the stages of coding and data entry. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and means and standard deviations for qualitative variables.

Result:

Table (1): This table showed the socio-demographic characteristic of the studied maternity nurses. It was found that 58.3% of studied maternity nurses were technical Institute. While100% of them had knowledge about the safety measures for giving the medication.

Table (2): This table revealed that maternity nurses' knowledge regarding the drugs used in labor unit and precautions of administrating medications. The results revealed 41.7% of the studied maternity nurses had complete, correct answer about indications to use the drugs that stimulate uterine contraction, while 77.8% of the studied maternity nurses had incomplete, correct answer about indications for the use of magnesium sulfate.

Table (3): This table reflected that, there was a highly statistically significant difference between maternity nurses age, year of experience in labor unit and their knowledge regarding the medications used in labor unit and precautions of medications administrating at p value (<0.001**&0.016*). On the other hand the result revealed that, there was no statistically significant difference between qualification and source of knowledge regarding the medications used in labor unit and precautions of medications administrating.

Table (4): This table showed that, there was a statistically significant difference between the nurses' level of practice regarding medication administration in labor unit, their age and years of experience at p value (0.002*&0.012*) respectively, by mean with increase of studied maternity nurses age, the complete satisfactory level of practices increase (85.7%). While, there was no statistical significant difference between the maternity nurses level of practices, their qualification and source of knowledge.

Table (5): This table pointed to, there was statistically significant difference between maternity nurses' knowledge regarding the medications used in labor unit, precautions of administrating medications and nurses' level of practice at p value (0.046*).

Figure (1): This figure illustrated the total score of maternity nurse's knowledge regarding the medication used in labor unit and precautions of administrating medications, which reflected that 52.8% of them had incomplete satisfactory knowledge while 27.8 of them had complete satisfactory knowledge**.**

Figure (2): This figure illustrated that, 47.3% of the studied maternity nurses had a complete satisfactory level of practices regarding drug administration. While 33.3% of them had an unsatisfactory level of practices.

Table (1): Socio-demographic characteristics of the studied maternity nurses (n=36).

Items		n=36 n= (%)	
Age	20- 30	22	61.1
	>30-40	14	38.9
Education	Diploma of Nursing	15	41.7
	Technical Institute	21	58.3
	Bachelor of Nursing Science	0	0
	Postgraduate (Master-PhD)	0	0
Years of experience in labor unit	< 5 years	17	47.2
	5 to < 10 years	7	19.4
	10 to < 20 years	10	27.8
	20 years and over	2	5.6
Do you have knowledge about the safety measures for giving the medication in labor unit	Yes	36	100
	No	0	0
Source of knowledge	Work experience	34	94.4
	Colleagues	2	5.6
	Media	0	0
	Training courses	0	0

Table (2): Maternity nurses' knowledge regarding the drugs used in labor unit and precautions of administrating medication.

Items	Wrong or no answer	Incomplete correct answer	Complete correct answer
		n=36 n= (%)	
The most common drugs used in labor unit	0 (0)	24(66.7)	12 (33.3)
Indications to use drugs that stimulate the uterine contraction	0 (0)	21 (58.3)	15 (41.7)
Role of the nurse when use the drugs that stimulate uterine contraction	0 (0)	23 (63.9)	13 (36.1)
Side effect of Oxytocin drug	9 (25)	13 (36.1)	14 (38.9)
Side effects of misoprostol	8 (22.2)	16 (44.5)	12 (33.3)
Side effects of Methergine	0 (0)	23 (63.9)	13 (36.1)
Indications for the use of narcotic drugs in the labor unit	9 (25.0)	27 (75)	0 (0)
Indications for the use of magnesium sulfate	0 (0)	28 (77.8)	8 (22.2)
Side effects of magnesium sulfate	10(27.8)	16 (44.4)	10 (27.8)
Signs of magnesium sulfate toxicity	17 (47.2)	17 (47.2)	2 (5.6)
Role of the nurse when use the magnesium sulfate	13 (36.1)	17 (47.2)	6 (16.7)
Indications for the use of analgesic drugs in labor unit	15(41.7)	0 (0)	21 (58.3)
Indications for the use of antibiotics in labor unit	9 (25.0)	17 (47.2)	10 (27.8)
Types of medication errors	14 (38.8)	16 (44.5)	6 (16.7)
Safe rules to give medication in Labor unit	0 (0)	24 (66.7)	12 (33.3)
Role of the nurse to prevent the medication errors	0 (0)	23 (63.9)	13 (36.1)
Role of the mother to prevent medication errors	0 (0)	11(30.6)	25 (69.4)

Table (3): Relation between maternity nurses' knowledge regarding the medications used in labor unit and precautions of medications administrating and their socio-demographic characteristics (n=36).

Item	Knowledge									
	Unsatisfactory		Incomplete satisfactory		Complete satisfactory		Total		Chi-square	
	N	%	N	%	N	%	N	%	X^2	P-value
Age										
20-30	5	22.7	16	72.7	1	4.5	22	100	15.572	<0.001**
>30-40	2	14.3	3	21.4	9	64.3	14	100		
Qualification										
Nursing Diploma	4	26.7	9	60.0	2	13.3	15	100	2.875	0.237
Technical Institute	3	14.3	10	47.6	8	38.1	21	100		
Years of experience in Labor unit										
< 5 years	2	11.8	14	82.4	1	5.9	17	100	15.542	0.016*
5 to < 10 years	3	42.9	2	28.6	2	28.6	7	100		
10 to < 20 years	2	20.0	2	20.0	6	60.0	10	100		
20 years and over	0	0.0	1	50.0	1	50.0	2	100		
Source of knowledge										
Work experience	7	20.6	18	52.9	9	26.5	34	100	0.791	0.673
Colleagues	0	0.0	1	50.0	1	50.0	2	100		

Table (4): Relation between maternity nurses' practices regarding the medication administration in labor unit and their socio-demographic characteristics (n=36).

Item	Practice									
	Unsatisfactory		Incomplete satisfactory		Complete satisfactory		Total		Chi-square	
	N	%	N	%	N	%	N	%	X^2	P-value
Age										
20-30	11	50.0	6	27.3	5	22.7	22	100	13.685	0.002*
>30-40	1	7.1	1	7.1	12	85.7	14	100		
Qualification										
Nursing Diploma	3	20.0	5	33.3	7	46.7	15	100	3.924	0.141
Technical Institute	9	42.9	2	9.5	10	47.6	21	100		
Years of experience in labor unit										
< 5 years	8	47.1	6	35.3	3	17.6	17	100	16.309	0.012*
5 to < 10 years	3	42.9	1	14.2	3	42.9	7	100		
10 to < 20 years	1	10.0	0	0.0	9	90.0	10	100		
20 years and over	0	0.0	0	0.0	2	100.0	2	100		
Source of knowledge										
Work experience	11	32.4	6	17.6	17	50.0	34	100	2.193	0.334
Colleagues	1	50.0	1	50.0	0	0.0	2	100		

Table (5): Relation between maternity nurses' knowledge and practices regarding the medication administration in labor unit (n=36**).**

Practice	Knowledge: Unsatisfactory		Incomplete satisfactory		Complete satisfactory		Total		Chi-square	
	N	%	N	%	N	%	N	%	X^2	P-value
Unsatisfactory	5	13.9	6	16.7	1	2.8	12	33.3		
Incomplete satisfactory	2	5.6	3	8.3	2	5.6	7	19.4	9.652	0.046*
Complete satisfactory	0	0.0	10	27.8	7	19.4	17	47.3		
Total	7	19.4	19	52.8	10	27.8	36	100.0		

Figure (1): Total score of maternity nurse's knowledge regarding the drug used in labor unit and precautions of medications administrating

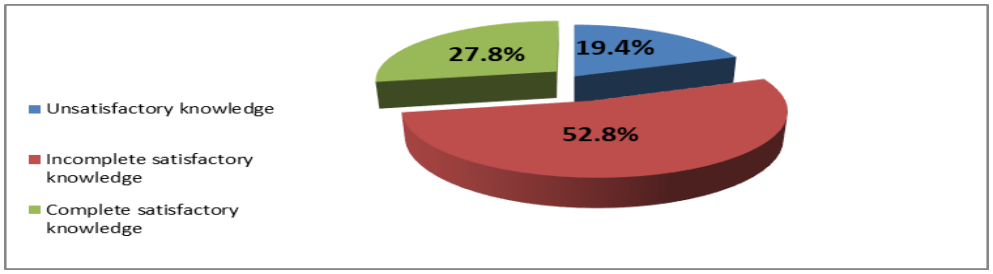
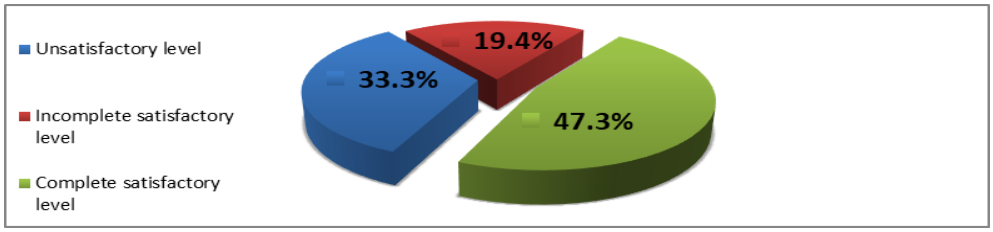


Figure (2): Total score of maternity nurses' practices regarding medication administration among maternity nurses.



Discussion:

The volume and complexity of medication administration contribute to the risk of medication error which take a heavy financial to all health care system. The process medications administration includes prescribing, transcribing, dispensing compounding, administering medications and ends with the monitoring and evaluation of their effects. Currently medication administration is a key role for nurses in most practice settings. Nurses are accountable to ensure they have the necessary knowledge, skills and abilities to safely and competently administer medications **(Collage of registered nurses, 2017)**.

Medication administration errors are considered to be a global problem resulting in an increase in mortality rates, length of hospital stay, and related cost the medication administration error is defined as "any preventable event that may cause or lead to inappropriate medication use or women harm

while the medication is in the control of the health care professional, women, or consumer." Registered professional nurses have a vital role in reducing these errors as they are the key role players in the medication administration process **(Preez, 2016)**.

Regarding socio-demographic characteristics of the studied sample**,** the present study result revealed that slightly less than two third of the studied sample were in the age group of 20-30 year. This finding is in agreement with **Shafie & Shamsuddin (2011),** who reported in a published study conducted in University of Kebangsan Malaysia, entitled as" knowledge of nurses in the preparation and administration of intravenous medication" that half of the studied sample was aged between 25 and 30 years.

Concerning the nurse's qualification, the study result showed that, slightly more than half of the studied sample had a technical institute certificate. This finding in the same line with **Abdel twab, (2018)**, who reported in a published study conducted in Egypt, entitled as" Factors affecting nurse's performance regarding drug administration" that slightly less than three fourth of the sample had a technical institute certificate.

In relation to years of experience in labor unit, the current study showed that approximately half of the studied maternity nurses had less than 5 years of experience. This finding is consistent with **Pournamdar & Zare (2016)** who reported in a published study conducted in Iran entitled as Survey of Medication Error Factors from Nurses' Perspective he found that slightly more than half of the studied sample had less than 5 years of experience.

The most common wrong answer among the studied sample were regarding the question of signs of magnesium sulfate toxicity and indication for the use of analgesic drugs in labor unit and they represented that half of the studied sample. While the nurse get incomplete, correct answer regarding the question of indication for the use of magnesium sulfate represented that three fourth of the studied sample, and indication for the use of narcotic drugs in the labor unit, represents three fourth of the studied sample. But the common complete, correct answer was related to the question regarding the role of the mother to prevent medication error, and that represented more than two third of the studied sample. This may be explained some knowledge can be acquired through the practical filed and years of experience, but other knowledge must be know scientific regarding workshops. This finding in the same line with **Verma, Jain, & Budhwani, (2016)**, who reported in a published study conducted in India, entitled as" Obstetric emergencies: preparedness among nurses for safe motherhood " that slightly less than two fourth of the sample had wrong answer about signs of magnesium sulfate toxicity.

Concerning the total score of maternity nurses' knowledge regarding the drugs used in labor unit and precautions needed for medication administration, the results of the current study noted that slightly more than half of the studied sample had incomplete satisfactory knowledge. This may be due to absence of training courses or reading about medications used in labor unit, on the other hand the wide base for nurses' education is diploma and technical institute and mostly they didn't search knowledge by them self they need acquire the knowledge from practical field.

This result is consistent with **Sharad et al., (2016)**, who studied the " effect of demonstration on knowledge & practices regarding selected obstetric drugs among nurses working in labour room in urban area" in India and he represented that more than half of the studied sample had inadequate knowledge score regarding selected obstetric

drugs. This agreement may be due to lack of training courses, absence of continuous supervision and evaluation during drug administration procedures, and absence of standard guidelines for administration of medication in labor unit.

Related to steps followed during given any drug in labor unit, The present study revealed that, slightly less than two fifth of the studied sample explain the procedure to the mother and aim of treatment before medication administration. This is consistent with **(EL-Sayed, 2016)**, who reported in a published study conducted in Egypt " Assessment of Nurses Performance Regarding Medication Administration Safety in Intensive Care Unit", that slightly more than half of the studied sample explain procedure to the patient and aim of treatment before medication administration. This agreement may be due to shortage of nursing staff and heavy work load on nursing staff.

Concerning total score of maternity nurses' practices regarding medication administration in labor unit, the current study illustrated that, slightly less than half of the studied sample had complete satisfactory level of practices and followed by about one third had an unsatisfactory level of practices. This result was supported by **Sharad et al., (2016** who reported in a published study conducted in India entitled as " effect of demonstration on knowledge & practices regarding selected obstetric drugs among nurses working in labour room in urban area" that slightly less than two third of the nurses had performed correctly regarding administration of selected obstetric drugs in labour room. This could be attributed to many reasons as; lack of nurses' knowledge which reflects on their performance, lack of orientation program prior to work in labor unit, adding to shortage of the nurses staff leading to work overload in this unit, unavailability nursing guidelines book, lack of job description, absence of bachelor degree between the studied nurses and not having enough information about drug administration, not taking training course about drug administration, lack of supplies, and absence of technology devices such as infusion pump (IV therapy) all of these contributed to unsatisfactory practices regarding medication administration in labor unit.

Regarding relations between nurses' socio-demographic characteristics and studied sample knowledge score regarding drugs used in labor unit and precautions of administrating medications and studied sample practices level, the results of the current study revealed that there was statistically significant difference between the nurses' level of knowledge and practices level regarding drug administration and their socio-demographic characteristics, for their age and years of experience. This result was in harmony with **Shiny, (2017),** who studied the " Assessment of the Knowledge and Practice on Use of Oxytocin among Nurses Working in Selected Hospitals in Chennai" that there was a statistically significant association between the knowledge and socio- demographic characteristics (age&year of experience) and also between level of practice and socio- demographic variables such as age, religion and income, total years of working experience and in-service education.

The result of the current study pointed to, there was a statistically significant difference between maternity nurses' knowledge regarding the drugs used in labor unit and precautions of medications administrating and nurses' level of practice this may be due to, when the nurse have a scientific base of knowledge, it improve her practical level and vice versa. This result goes in the same line with **Shiny, (2017),** who reported in a published study conducted in Chennai, entitled as" Assessment of the knowledge and practice on use of oxytocin

among nurses working in selected hospitals in chennai" that there was a statistically significant association between the nurses knowledge and practice.

Conclusion

In the light of the finding of this study, the following facts could be included;

1-Slightly more than half of the studied nurses had incomplete satisfactory knowledge regarding medication administration in labor unit.

2- Slightly less than half of the studied nurses had an incomplete satisfactory level of practice regarding medication administration in labor unit.

3- There were many factors affecting nurses' performance regarding medication administration from their point of view as; in which the majority of the studied sample expressed that heavy work load on nursing staff, don't check for possible interactions of the medications used at the same time and lack knowledge about precautions of each medication (for example, magnesium sulfate) were the common nurses' nurses' related factors, all the studied sample expressed that "complexity of clinical case of the mother, including multiple health conditions, poly-pharmacy and high-alert medications was the common mother related factors, while more than three fourth of the studied sample reported that insufficient resources in the labor unit was the main work environment ' related factors additionally the majority of the studied sample agree on labeling and packaging medications related factors.

4- There was a statistical significant difference between age, years of experience of the studied sample and their knowledge & practice level regarding medication administration in labor unit.

5- There was a statistical significant difference between nurses and knowledge & practices**.**

-All the previous point answer the current study research questions

Recommendations:

In the light of the finding of this study, the following recommendations are suggested;

1- In service training programs is required for maternity nurses regarding medication errors and how to overcome it.

2- Provision of instructional standardizing guideline for medication administration at the department is recommended to increase awareness and improve level of knowledge about obstetric medication administration.

Further studies:-

1- The study should be replicated on a large sample and different hospitals in order to generalize the results.

2- Future research should be conducted to examine the effect of apply structured education program regarding medication on maternity nurses knowledge and practices

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No funding was received.

Conflict of interest:

No Yes

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